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PRINCETON UNIVERSITY

The Celebrations of the American Psychological Association

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CENTENARY OF THE BIRTH OF WILLIAM JAMES
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THE PSYCHOLOGICAL REVIEW

PREFACE

THE CELEBRATIONS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

In 1942 the American Psychological Association was invited to hold its regular fall meeting at Harvard University and to celebrate there both its own semi-centenary and also the centenary of the birth of William James, the American pioneer in scientific psychology. Unfortunately the War, begun by the very nation that gave birth to the new psychology, caused the cancellation of this meeting with its attendant celebrations. The Office of Defense Transportation requested that members of large societies forego their annual conventions in order to decrease the demands upon the railroads, already overburdened on account of the restriction on the use of automobiles in the eastern United States. Since it had been originally planned to publish the addresses of the two celebrations in this number of the PSYCHOLOGICAL REVIEW, the oldest of the Association's journals, it was decided not to abandon this final phase of the project, but to substitute a meeting of minds for the meeting of men, thus marking the dual anniversary by a vicarious Commemorative Number.

THE ASSOCIATION'S CELEBRATION

The first part of this number is the semi-centennial celebration of the American Psychological Association. It contains the principal addresses: a history of American psychology by Woodworth and a history of the Association by Fernberger. With these addresses there were to have been five-

minute speeches—reminiscences and minor comment. For these speeches we have substituted short papers by the persons who were to have made the speeches, including some who were wanted but might not have been able to come: Jastrow, because of his early participation in American psychology and his connection with Hall's early laboratory; Stratton, to represent Leipzig; Pillsbury, as representative of the Cornell tradition; Yerkes, for the beginning of animal psychology. Cattell, now the Dean of American psychology and of the Association, did not care to write something new, so for him we have reprinted an excerpt from his history of the early days of the Association, as he retailed it in his address at the twenty-fifth anniversary of the Association and also his account of the founding of the laboratories at Hopkins and Clark. We asked Köhler because, although he is now one of us, he comes as having been an outsider and we thought that his vision of us would be less myopic than the sketches by indigenous psychologists. Since Seashore was to have been the 'toastmaster' at this celebration, he contributes his 'toastmaster's speech.'

Because Fernberger's paper establishes the fact that G. Stanley Hall is indeed the founder of the Association, we meant to borrow from Clark University the Grumbine portrait of Hall and to show it on the platform at the celebration. Instead we reproduce here a photograph of this portrait which is now in the G. Stanley Hall Memorial Room of the Clark Laboratory and which is shown here by the courtesy of Clark University.

As supplementing Woodworth's and Fernberger's papers, we had a project at Harvard to exhibit by quinquennia piles of American psychological journals, thus plotting the growth of periodical literature in the half-century 1890-1940—or else to exhibit a large photograph of such piles. This project has been carried out in the Robbins Library in Emerson Hall and the photograph is reproduced herewith—a substitute for part of the historical exhibit.

THE JAMES CELEBRATION

The second part of this number is the centennial celebration of the birth of William James on January 10, 1842. It contains two of the principal addresses planned: one by Thorndike on certain of James' influences on psychology, and the other by Allport on some of the paradoxes in James' thought. Preoccupation with problems of the War prevented Perry from writing his address on the psychologist James as a philosopher sees him, but we are fortunate in having from Perry a short note. We have also short papers from Dewey, the co-founder with James of functional psychology; from Delabarre, who ran the Harvard Laboratory for James when Münsterberg was making up his mind in Germany whether or not to come back to America and Harvard; from James' enthusiastic students, Starbuck and Angier. Angell, who was to have been 'toastmaster,' contributes here his 'toastmaster's speech.'

We reproduce, by the courtesy of Harvard University, the Emmet portrait of William James, which was to have been shown on the platform at the celebration. This portrait is now in the Faculty Room in University Hall at Harvard.

There was also to have been an exhibit of psychological letters and manuscripts by James, from the William James Collection at Harvard. The exhibit would have been shown in the Houghton Library, Harvard's new treasure library. Instead we reproduce in facsimile parts of two letters from James, one to Stumpf in 1887 about Wundt, and another to Münsterberg in 1890 about having 'a natural taste for experimenting,' a taste which James disclaimed for himself. The letter of Stumpf has been published,¹ the letter to Münsterberg apparently not.

JUBILEE OF THE PSYCHOLOGICAL REVIEW

This number also marks the beginning of the fiftieth volume of the PSYCHOLOGICAL REVIEW. It has seemed proper

¹ James, H., *The letters of William James*, 1920, I, 262-267, esp. 263; Perry, R. B., *The thought and character of William James*, 1935, II, 68-71, esp. 68f.

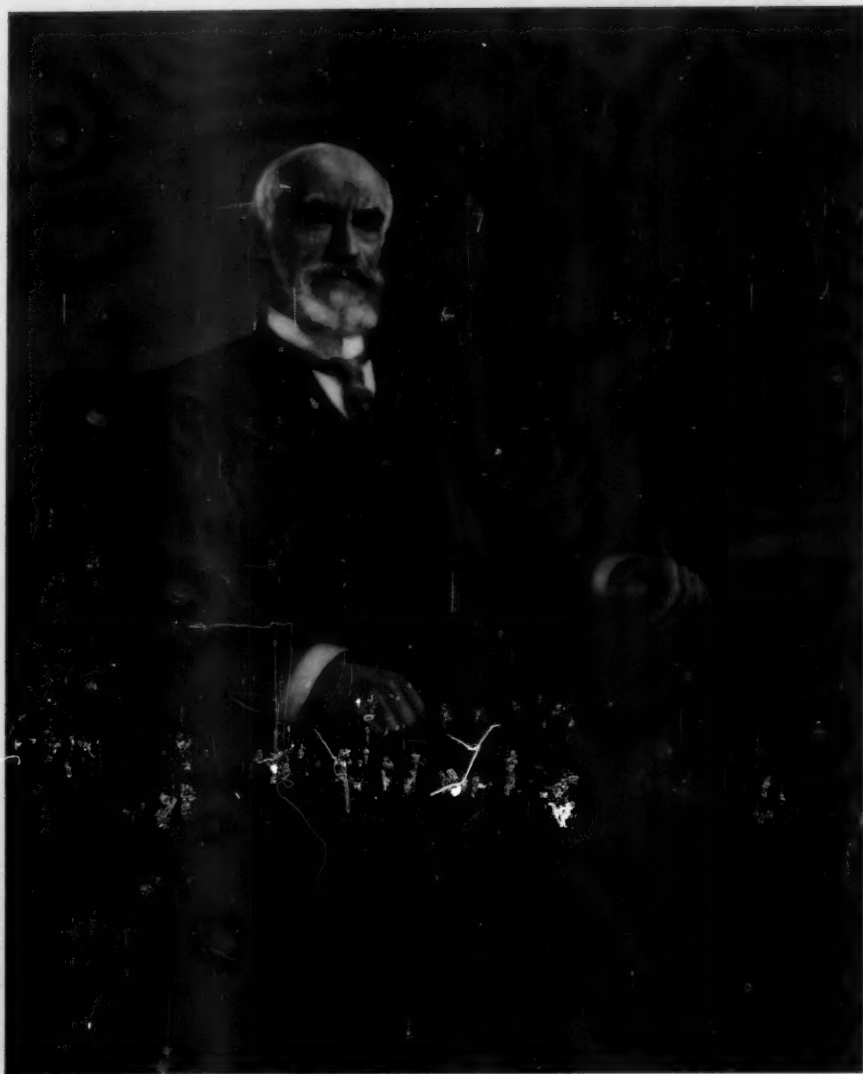
that this jubilee should also be celebrated along with these others. Thus the third part of this number consists of a history of the *PSYCHOLOGICAL REVIEW* by its editor, Langfeld, who wrote, at the request of the Celebration Committee, this account of some of the important contributions that have appeared in the *REVIEW*'s pages.

EDWIN G. BORING,

Chairman of the Celebration Committee.

Semi-Centenary of the American Psychological Association

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G. S. Tinsley Hall

TOASTMASTER'S SPEECH

BY C. E. SEASHORE

An imaginary chairman greets an imaginary audience. The tables had been set for a festive celebration of our semi-centennial; but in response to our country's call, the officers of this Association have called off the 1942 meeting except for the business sessions held in New York on September 4th. However, the prospective fruits of the 50th meeting of this Association will not be lost. The regular *Bulletin* issue of the abstracts of papers that would have been presented is in our hands and gives us an excellent preview of this year's contributions to psychology, many of which will appear in full in the journals. The business transactions of the Association have been handled efficiently by the New York meeting. There is therefore no great sacrifice in that respect.

The papers prepared for this program are all printed in full in this number of the REVIEW. This number of the REVIEW will be printed in a large edition and will be placed on sale at a nominal price for members of the Association who are not subscribers, and for scientists in other fields who would read with great interest of the development in a sister science. There is therefore no great sacrifice in the way of reaching the fullest constituency. It is a most happy coincidence that the celebration of this historical event should be personalized by a parallel program recalling the life and works of one of the most distinguished and beloved of our founders, William James.

What we did miss was the opportunity to gather around a festive board, greet friends in the historic halls and enjoy personal presence in the spirit of comradeship in the national celebration of this historic event. But each of us had the far greater satisfaction of giving his time, energies and money to the support of a world in travail in the present tragic crisis. So let us read the complete written reports of the proceedings

in an appreciative mood of gratitude and satisfaction for the truly remarkable achievements attained; and let us pledge our selves, our very lives, not only to the furtherance of the cause of our science, but, at this time in particular, to the harnessing of the mental sciences and arts for the winning of the war and in preparation for our share in the intellectual, social and moral reconstruction of the world through what contributions we can give to human engineering.

On this occasion it is appropriate that we acknowledge our obligations to the past and bow in deep gratitude to the philosophers, the physical scientists, biologists, physicians, mathematicians, naturalists, historians and literary scholars who made contributions which at the end of the pre-scientific period of psychology could be collected and integrated as comprehensive foundation material for the new science.

In the period preceding the organization of this Association, the philosophers of all nations had turned en masse to the field of psychology. We must pay our sincere tribute to these philosophical sponsors of modern psychology for their encyclopedic volumes constituting a most impressive logical and literary treasure house of psychological facts and interpretations. The psychological textbooks available in the early '90's would put to utter shame the now current textbooks, manuals and compendia. The students of today would develop a proper sense of humility, respect and gratitude to their forbears if they were to begin their studies in psychology by readings in this literature before beginning their laboratory researches.

It is not easy to pay adequate tribute at the same time to philosophy, the alma mater of psychology, and to psychology, the rebellious offspring. More than half of the leading laboratories in America were founded in the decade in which this Association was born. To the founders of these laboratories we should pay our sincere tribute for their heroic pioneering efforts and appraise their achievements in the light of the unmarked paths they had to explore, the hardships they overcame and the truly great progress of our science which their far-sighted vision fostered.

I have had the pleasure of seeing the advance proof of the papers on this program and am delighted to see how well these various obligations have been remembered. The leading papers are milestones marking this semi-centennial appropriately, and it is a great pleasure to have the words of the real pioneers still with us.

We extend thanks to the local committee, which, although relieved of the responsibility of arranging the Harvard meeting, has rendered extraordinary service to the Association by the organization and implementation of this celebration in absentia. To the historians of the hour as well as to the contributors of the reminiscences, we are duly grateful. This volume will stand as a memorable landmark in the development of American psychology.

THE ADOLESCENCE OF AMERICAN PSYCHOLOGY

BY R. S. WOODWORTH

Psychology, we are fond of reminding ourselves, is still a very young science. It has the forward outlook, the hopefulness, perhaps the instability and certainly the resilience of youth. Its achievements to date are at most those of a young adult. Fifty years is not a long time in so vast an enterprise as ours—not so long, we are happy to say, but that some of the founders of our Association still remain to give it their blessing and “surrender it o’er from the age that is gone to the age that is waiting before.” At this jubilee period we pause for a moment in our onward course to look back over the road we have traversed, to honor the founders who started us on the way and consider how far their hopes for the Association and for American psychology have been realized, and to ask ourselves what new hopes have taken shape to beckon us still further along the road of scientific progress and service to our country and to mankind.

If we could imagine our present meeting being visited and inspected, not by the customary ‘Man from Mars’ but by some one of our own founders who had remained out of touch with subsequent developments, such a visitor would certainly find us very different from what he might have expected. He might reasonably be amazed at the mere size of our group, at the numerous papers and parallel sessions, and perhaps at the obvious absence of sex discrimination among the psychologists. He would hear some talk of behaviorism, psychoanalysis, Gestalt psychology, apparently the names of systems or subgroups unknown in 1892, but these names would not be used often enough in our meeting to cause him much trouble. A word recurring often in the program and in the papers and discussions would be familiar enough to him as a word but seeming to have taken on some new meaning or meanings, not very clearly defined. The word, you need not be told, is ‘personality.’ He would note that nearly all the

papers are based on experimental or other concrete data, and that there is a minimum of broad philosophical discussion of free will, the mind-body problem or the reality of the external world. He would notice quite a number of papers on physiological psychology and looking into this matter he would find these papers based on genuine physiological techniques used by psychologists on genuinely psychological problems. He would notice a large number of papers on abnormal and clinical psychology and would find them based on actual studies of problem children and mentally disordered adults. He would find papers by school psychologists and by personnel psychologists working in business and industry and even in the Army and Navy. He would be gratified to observe that social psychology, already recognized as a desideratum when our Association was founded, is now evidently coming into its own, with many papers on our program, about half of them based on studies of student groups and about half on what might be called field studies of public opinion and morale. He would observe that much work was being done on the preschool child. All in all, he would be convinced, the working contacts of psychologists must have been enormously broadened and diversified since the early days, and he might wonder whether the laboratories of which the founders were so proud as a symbol of the new psychology were being used any longer. Careful inspection of the program would reveal many laboratory experiments on learning, motivation, and perception, though he might be surprised at the large proportion of these done on animal subjects. Some one in fairness might whisper to him that a good share of the laboratory psychologists, and of others as well, are currently engaged on problems related to the war effort and not yet available for public report.

Reading the 1942 Program (I) and listening to as many of the papers as one person could take in, our psychological Rip Van Winkle would encounter well over a hundred technical terms that would be more or less unintelligible to him, no matter how well grounded he was in the psychology of 1892. For some of these terms, like 'airplane pilot' and 'radio announcer' we should hasten to disclaim any peculiar

credit for psychology, but most of them are our own jargon and we can well believe it would require more than intuition to make out their meaning. A few of them are:

configuration	level of aspiration
closure	stereotype
life space	psychological clinic
Oedipus complex	psychometrics
transference	job analysis
id	paper-pencil test
introversion	group Rorschach
schizophrenia	thematic apperception
cyclothyme	IQ
conditioned response	Stanford-Binet
extinction	Alpha score
law of effect	rating scale
retroactive inhibition	attitude measure
paired associates	interest inventory
elevated maze	odd-even reliability
jumping apparatus	Pearson coefficient
audiogenic seizure	attenuation
brain wave	factor analysis
laboratory crime	

Thinking back to the origin of these terms would yield some interesting glimpses of the history of our fifty years. But we are not to assume that all of our current jargon would be unfamiliar to our visitor from 1892. He should have no difficulty with the following, culled from the 1942 program:

reflex	pure tone
motor area	limen
phantasy	nonsense syllable
unconscious	retention score
hypnosis	memory trace
multiple personality	reaction time
visual acuity	test
retinal adaptation	questionnaire
binocular depth perception	median
Müller-Lyer illusion	percentile
reversible figures	

Those are not all the old words still in use, by any means. It is an interesting question whether many of the old words have gone out of use, so that we would require an antique glossary to understand James's *Principles* (1890) or the *Proceedings* of the early A.P.A. meetings. Perhaps we should have to consult Warren's Dictionary to make sure what James meant by 'ideomotor activity' or by the 'psychologist's fallacy,' but with very few exceptions the terms used by the psychologists of that day are still perfectly intelligible. Some confusion might arise from the curious history of the words 'structure' and 'structural.' In 1892 'structure' meant anatomy, usually the anatomy of the nervous system. About 1900 a distinction was drawn between 'structural' and 'functional' psychology, 'structure' now referring to the composition of mental states or processes as made up of elementary sensations. The Gestalt psychologists opposed this elementalism, but they liked structure and sometimes even referred to their system as 'structural psychology.' Within the last ten years, behaviorism and introspectionism have been bracketed at least once as the 'two main forms of structuralism,' probably because both were opposed to 'functional psychology.' Evidently we could avoid confusion by dropping the various figurative usages and going back to the anatomical meaning of structure, which of course is still current. 'Organization' is another old word that carries different shades of meaning to psychologists of differing background. On the whole, however, our old words have remained fairly stable; and on the whole, also, the technical vocabulary of psychology, in comparison with that of physics, chemistry or biology, is a very small affair.

American psychology was by no means a newborn babe in 1892. It had already had at least a few years of active growth in the world. And we can go far back of 1892 and still find psychology taught in our colleges, and textbooks written for the use of college courses. Let us imagine for a moment that we were now celebrating our one-hundredth instead of our fiftieth anniversary—could we find any psychology active enough in 1842 to deserve a centennial cele-

bration? As a matter of fact, this period about 100 years ago, extending from the 1830's into the 1850's, was a decidedly active period in what was then known mostly as 'mental philosophy,' though the name 'psychology' was coming in and was already used quite freely (5, 6). A flood of college textbooks on mental philosophy appeared during these years, and they were not skimpy little books, some of them running indeed into two or three volumes. There was evidently a demand for improved courses in the subject and the professors had been laboring for a decade or two to whip the material into shape. They borrowed largely from the Scottish philosophers but put a good deal of original thought into the development and organization of the subject matter.

We are apt to assume that this old 'mental philosophy' was much more philosophy than psychology, but that was scarcely true 100 years ago. As Professor Thomas C. Upham of Bowdoin College, one of the pioneers in this movement, said in 1840, "It will be our desire to rest mainly upon facts, and the obvious deductions from them; and to avoid, as much as possible, mere speculation. . . . The inquiries . . . ought to be prosecuted in essentially the same manner as our inquiries into the physical world" (19). Psychology was to be an empirical science. Its data were furnished primarily by each individual's own consciousness, but partly by observation of the doings of other people, including mentally disordered persons, and use was also made of cultural phenomena and of crime statistics, etc. Often the appeal was to "what everyone knows," the general agreement of mankind. These textbooks were not entirely free from epistemology and ethical theory, but the academic philosophy of that time in America was not highly critical and did not encroach too much on the more empirical psychology. The textbooks of a somewhat later period, from about 1870 to nearly 1890, suffered as psychology from becoming more critically philosophical; and they became so obsessed with the mind-body problem that, when admitting any physiological matter, they took time out to warn the student against any materialistic implications. American psychology was in some respects better off 100

than 60 years ago. As far as academic status is concerned, it was better off in that general period than it is today, for it was typically the outstanding course of the senior year, usually taught by the President, and making no mean claims for itself as being essential for the orator, the preacher, the teacher, and the physician, and important also for the personal management of life, for training the mind and clarifying the student's religious beliefs.

There is more continuity than one might expect to find between the content of the textbooks of 1842 and 1942. Many of the old chapter headings remain, except that, contrary to a common criticism of the nineteenth century psychology as 'intellectualistic,' much more space was given to the feelings and will than in these later years. The old mental philosophy course continued without break into the elementary psychology course of today. We must remember that when the 'new psychology' of about 1892 came in, it did not usually assume charge of the elementary course, which continued in the hands of the philosophers. In some colleges the shift was postponed for twenty or thirty years. But even when this course was turned over to the experimental psychologists, they could not remodel it suddenly and completely, for they did not possess the experimental data for tackling all the questions that were traditionally and quite properly taken up in the psychology course. New material has been introduced bit by bit and some of the older discussion material has been eliminated, but we of the present day cannot, and need not, deny our academic ancestry of a hundred years ago.

The older American psychology was concerned with the powers and operations of the mind. It was in a broad sense a functional psychology. It certainly was not conceived as an attempt to describe and analyze the content of conscious experience. Titchener, coming among us, saw quite clearly that the traditional American psychology was by no means 'structural' in his sense. Nor was it at all inclined to atomism, and, though it was free to employ the laws of association, it was by no means strictly associationistic. It was not in all

points logically self-consistent and systematic. In fact, aside from the meagerness of its data and the long-windedness of its discussions, and aside from its occasional lapses into theology, it was not very different in spirit from the psychology that has persisted here through the last fifty years and that remains dominant among us today.

For all that, a revolutionary change did come over the outlook of American psychology in the last two decades of the nineteenth century. There came a sense of the meagerness of existing knowledge and a buoyant hope that great things could be achieved for psychology by the use of natural-science methods. The experimental method above all, but also the comparative, developmental and pathological methods were eagerly adopted. The first four Presidents of the American Psychological Association—Hall, Ladd, James, and Cattell—were all active in promoting experimental psychology, though Cattell more than the others was himself an experimenter. Ladd and James labored for physiological psychology, though James looked for most enlightenment from the side of mental pathology. Hall was interested in any new approach but made his greatest contributions in the developmental field.

James, as early as 1867, while studying physiology at Berlin, wrote to a friend,

It seems to me that perhaps the time has come for psychology to begin to be a science—some measurements have already been made in the region lying between the physical changes in the nerves and the appearance of consciousness . . . and more may come of it. I am going on to study what is already known, and perhaps may be able to do some work at it. Helmholtz and a man named Wundt at Heidelberg are working at it (12, p. 118).

James began teaching some physiological psychology at Harvard early in the '70's and by the end of that decade was hard at work on what proved to be a most difficult task, the writing of an adequate psychology as of that period. The publication of this book in 1890 is probably the greatest landmark in the progress of American psychology. He himself said of it,

The great event for me is the completion of my tedious book. . . . As 'Psychologies' go, it is a good one, but psychology is in such an ante-scientific condition that the whole present generation of them is predestined to become unreadable old medieval lumber, as soon as the first genuine tracks of insight are made (12, p. 296).

Stanley Hall, after much study in Germany and after obtaining the Ph.D. in psychology under William James in 1878, devoted himself with great energy and enthusiasm to the establishment of the 'new psychology' in America. In his introductory lecture at Johns Hopkins in 1882, while recognizing the importance of abnormal psychology—"All who would teach or profoundly study the laws of mind must now know something of its disease-forms"—he placed chief emphasis on the laboratory (7).

Experimental psychology properly begins in . . . physiology. . . . This part of psychology has been termed medical and physiological by Lotze and Wundt respectively . . . and surely merits the high place it is now winning in the best medical as well as philosophical courses of study, and unquestionably has a great future before it.

Not only a great future but also a solid basis of achievement was claimed by Hall in 1887 in the first number of his *American Journal of Psychology*, when he said in reviewing Ladd's new *Elements of physiological psychology* (8),

The vast fields . . . morbid and also of anthropological psychology, psychogenesis and instinct . . . are excluded . . . but from the fact of so large a book, covering only a part of its field, the reader will readily infer the immense accumulation of material which already crowds the psychophysic domain.

Hall's address in 1892 as the first President of the American Psychological Association was never published as such but is doubtless closely paralleled by an article on the same topic published in 1894, in which Hall thus expresses himself regarding the present status and prospects of the new psychology (9):

It is already represented in two-score of the best institutions. It has already a voluminous literature; several hundred standard

new experiments. . . . It studies the instincts of animals from the highest to the lowest. . . . It studies the myths, customs, and beliefs of primitive man. . . . It devotes itself to the study of insanity and nervous diseases, and has already begun to introduce new methods and utilize new results. . . . It has transformed and shaped the problems of logic and ethics; is slowly rewriting the whole history of philosophy, and, in the opinion of many of its more sanguine devotees, is showing itself not only to be the long hoped for, long delayed science of man, to which all other sciences are bringing their ripest and best thoughts, but is introducing a period that will be known hereafter as the psychological era of scientific thought, even more than a few recent decades have been marked by evolution. . . . No academic activity has ever appeared so directly in the line of all that is most national in our intellectual development. It is asking the old question, what is man, in many new ways, and giving, bit by bit, new and deeper answers in a way that I deem it not too much to say makes every prospect of our national future and of the republican type of government generally, brighter, and promises to be a realization of all that the old professors (of mental philosophy), in their best days, dimly strove for,—and more.

While making due allowance for the constitutional exuberance of our first President, we must certainly admit that American psychology in 1892 by no means regarded itself as a helpless newborn infant. Its spirit, rather, was that of early adolescence. Our second President, George Trumbull Ladd, a man of very different temperament from Hall, while taking note of the hesitation of many scientists to recognize the claims of psychology to be a science, went on to say (14),

On the other hand, it is no unbecoming pride which leads us to maintain that no similar organization is more hopeful, more disposed to be creditably aggressive, than are we. . . . The expectation is not unwarranted that the United States will soon become the co-worker, on equal terms, of the best European laboratories . . . I look for a large development of the science of psychology, in the near future; and I am certain that this development will not be without influence upon the current philosophy and theology, as well as on the practical welfare of the people.

William James, as our third President, had little directly to say of the prospects of American psychology, though he did indicate what he expected from the annual meetings of

the Association. He raised the problem of 'Knowing things together' (11), of how there can be unity in plurality, or better, plurality in unity. He rejected both the associationist and the spiritualist solutions, and adjured his fellow-members to drop "the old phrases, so absurd or so empty, of ideas 'self-compounding' or 'united by a spiritual principle,'" and while confessing himself unable to offer a positive solution expressed the hope "that some of you, more able than I, may be helped to advance, before our next meeting perhaps, to results that I cannot obtain." He envisaged the Association as a well-knit body devoting itself year after year to a rather continuous study of problems, largely theoretical in nature. The numerical growth of the Association and the withdrawal of the more philosophical members into a society of their own militated against this program which was evidently the expectation of a number of others among our early members.

A more accurate forecast of the tenor of our annual meetings was suggested by our next President, James McKeen Cattell. After calling attention to the remarkable growth of psychology in this country he devoted most of his address to a defense, against the skepticism of some of his colleagues, of the experimental and quantitative methods in psychology (2).

The academic growth of psychology in America during the past few years is almost without precedent. . . . Psychology is a required subject in the undergraduate curriculum wherever studies are required, and among university courses psychology now rivals the other leading sciences in the number of students attracted and in the amount of original work accomplished. . . . It seems to me . . . that measurements have just the same place in psychology as in the material sciences, except in so far as they have not been as yet so successfully prosecuted. . . . Psychological experiment has had and will have both practical applications and an important share in psychology as a whole. . . . Even in directions where experiment has not yet offered considerable contributions, it has performed an important service in setting a standard of carefulness and objectivity. . . . Experiment serves as a stimulus and starting point for thought. . . . The introduction of experiment has also made the teaching of psychology easier and more useful. . . . Experiment in psychology has made its relations with the other sciences more intimate and productive of common good.

The trend of our meetings after the first few years was definitely toward experiments and measurements. And the trend of the meetings was the trend of the country. Nor are we to infer from the fact that the first few Presidents were from Eastern universities, or from the fact that the first few meetings were held in the East, that the new psychology was confined to that part of the country. In the first decade two of the Presidents came from farther west, and in the second decade five; in the first decade one meeting was held farther west, and in the second decade three. Among the very early laboratories were those at Toronto, Michigan, Indiana, Illinois, Chicago, Wisconsin, Iowa, Nebraska, Stanford and California. Wolfe of Nebraska wrote in 1895 that while the Eastern universities had thus far mostly limited experimental psychology to the graduate school, the Midwest had gone ahead to introduce the subject to undergraduates, with encouraging results (20). The Midwest has always remained a psychological stronghold, though probably no more so than other sections. Outstanding contributions began coming early from the Pacific coast.

With our level of aspiration so extremely high at the outset it would be reasonable to expect some disillusionment as time went on. Were our founding fathers disappointed? Of the four men whose early hopes have been cited, Cattell would seem from his later statements to have been least disappointed, though even he seems somewhat on the defensive. In 1916, at the twenty-fifth anniversary celebration, he said (3),

We are each year carrying forward more and more research work and, I trust, are continually improving its quality. We are doing a larger quantity of work than any other nation and work of equal value. But our accomplishment falls far below what it might be and should be. Psychology does not attract a sufficient number of able men and adequate opportunity is not given to them. . . . We have all told fewer than 25 men who are able to devote more than half their time to psychological research, men who may be regarded as professionally engaged in investigation.

He traced this relative failure to the economic handicaps of research workers in psychology as in other sciences. In

1929, at the Ninth International Congress of Psychology, Cattell once more expressed his feelings on this matter (4).

The work at hand must be done; time will tell what part of it is useful and will survive. . . . It seems, however, that the chief contribution of America to psychology has not been large philosophical generalizations, but the gradual accumulation from all sides of facts and methods that will ultimately create a science, both descriptive and applied, of human nature and human behavior.

As early as the 1898 meeting, Ladd was moved to express some disappointment with the scientific progress of American psychology. He said (15),

As compared with the increase in number of trained teachers and investigators, and in the amount and quality of laboratory and other equipment, the *science* of psychology is not making with us the progress which may rightfully be expected of it. When inquiry is made, however, into the hindrances of progress, . . . it is found that one of these hindrances consists in the limited and faulty qualifications of psychologists. The first hindrance . . . is an excessive aloofness from, and a consequent ignorance of, the real mental life and mental development of the average human being. . . . The psychologist, then, who is a *mere* experimentalist, or a *mere* scholastic student and teacher, or a *mere* reader of books, does not thoroughly know his business. For his business is human nature.

One might have expected from Ladd some complaint of the failure of the younger psychologists to tackle deep philosophical problems, but instead of that, he felt that psychology in its effort to be scientific was getting out of touch with the concrete daily life of human beings. Much the same feeling was expressed at different times by James and Hall. James in 1906 told the Harvard Psychology Club (17) that as a student of psychology he had "always regarded it as but a part of the larger science of living beings. Official psychology is a very *small* part." There could be a much larger 'functional psychology,' which should discover the forces governing the moral and religious life of man and develop a technique for controlling them. "Laboratory psychology may be more accurate at present, but this program makes it look *small*."

Stanley Hall who had been most optimistic in 1892 expressed very definite disappointment in 1923 (10).

If we define psychology broadly as the knowledge of human nature, its academic devotees have during the last decade or two added but little of scientific or culture value and in some respects their work has rather dehumanized it. There is far too often a pedantry of method and technic with paucity of results. . . . The programs of our meetings contain too many unripe and minor papers by those in the apprentice stage while the leaders have relatively less and less to say, discussions of fundamentals or wider orientations as to first principles are out of date, and the differences between the sects seem to be accepted as necessary instead of being regarded, as they really should be, as challenges to rise higher and find some mediating principle. . . . But despite the many unprecedented difficulties and grounds for discouragement I cannot resist the optimistic conviction that we are steadily approaching a true and real trail and that, on the whole, it seems to slant upward.

It may be that if Hall could have lived to attend our recent meetings he would have found certain of our parallel sessions more to his taste; for though it is true that American psychologists, through the years and decades, have manifested a determination at all costs to be scientific and empirical in their work, they have not rested content with any aloofness from life. They have continually prospected in new fields, and the field of personality, just now undergoing extensive prospecting, may yield results satisfactory both to our scientific conscience and to the aspirations of our founders.

There is really much more reason to be proud than over-modest regarding the achievements of American psychology. When a psychologist is interviewed by a reporter at the end of a calendar year and asked to name the outstanding discoveries of the year, he may find it difficult to point out an obviously clear and important advance. It ought to be easy at the end of fifty years, and any of us would find no difficulty in selecting some field with which he is well acquainted and showing how great the advance has been. He might have to study over the matter in order to separate out the distinctively American achievements, since our science no less than

others is broadly international in normal times. It is interesting, however, to note how much more dependent on foreign sources we were in the '90's than today. Then an American psychologist was likely to refer to foreign books and articles more than to American. In 1898 and 1899, for example, 59 per cent of the references in the *PSYCHOLOGICAL REVIEW* and *American Journal of Psychology* were to foreign authors, but in 1938 only 27 per cent. Is this due to a narrow nationalism or to our poor command of the languages? In large measure it is due to the fact that we have been pushing ahead so intensively in certain favorite directions as to leave our foreign colleagues somewhat behind the firing line.

Let us remind ourselves of a few of the fields where American psychologists have been productive.

In the study of the senses and sense perception, psychology in 1892 was far from the beginning of things, for there was already an extensive body of knowledge. Yet there has been notable advance since that time, with American psychologists making some very important contributions to methods and results. The facts of eye movements and their bearing on space perception and esthetics were a distinctly American contribution of outstanding importance. The numerous sound cage experiments around 1900 established the main facts of auditory space perception, leaving to later workers on both sides of the Atlantic the task of discovering the stimulus cues of direction and distance. Much more recent is the use of amplified electrical waves from the cochlea and auditory nerve for the analysis of peripheral auditory processes, and this development is due to the initiative of American psychologists. And there are many other discoveries deserving of mention in the visual and auditory fields, and certainly also in cutaneous and internal sensation.

The broad field of learning and retention has always made a strong appeal to our group. At the outset we had the memory experiment of Ebbinghaus to work with, and this method we have developed and used quite successfully in studying the conditions favorable and unfavorable to retention, and in many other ways. In the '90's American psychologists in-

roduced the practice experiment and the animal-learning experiment—two lines of work which have been carried forward more intensively here than elsewhere, as have certain derivative experiments on interference and transfer, and on problem solving and motivation. When the animal-learning experiment was combined with removal of parts of the brain we had a fruitful method for studying cortical localization and related problems. Shortly we got wind of a novel type of learning experiment introduced by the Russian physiologist, Pavlov, whose fundamental discoveries have perhaps been more appreciated by American psychologists than by any other group. Work on the conditioned reflex, or the conditioned response as we have preferred to call it, has been carried out mostly by the Russian physiologists and the American psychologists, and the work here has steadily grown and become more incisive till we can now lay claim to very important advances in our knowledge of the nature and varieties of the conditioned response and its relations to other forms of learning. All in all there has been a great increase of knowledge since 1892 in this central field of learning and retention, and no mean share of the gain can be claimed for the contributions of literally hundreds of American psychologists.

The mental and behavioral development of the child is another field that has always appeared to our group as important in several ways. Development both mental and physical is an intensely interesting phenomenon, deserving for its own sake of scientific investigation. It is important also for its practical bearings on education and mental hygiene. And the adult form of a function or of a maladjustment can be better understood if its origin and development can be traced. The child is a fascinating creature and it is no wonder that the child study movement was started well before our Association was founded. Child study was often rather amateurish in those days, but still there were some substantial contributions. More recently, beginning about 1917, large funds have gone into this work and institutes for the many-sided scientific study of child development have been established in many universities. This is a field in which

psychology is finding it advantageous to work in close co-operation with the students of physical development, nutrition and medicine, and the results, if there were time to lay them before you, would be very impressive.

Psychological testing is a field that has been regarded as characteristically American, even though some of the major contributions have come from France and Britain. In the early days of our Association there was great activity in the development of tests for the measurement of individual differences in memory, imagery, association, sensitivity of all kinds, speed of perception and reaction, suggestibility, and many other specific traits and performances; and committees of the Association worked cooperatively to perfect these measuring rods. With the coming of the Binet system of tests interest shifted from these more specific measurements to the all-over appraisal of the individual's intelligence. The Binet tests were adapted, extended, and perfected, and group tests, performance tests, and achievement tests were added to the psychologist's equipment. Complaints were indeed made to the effect that all this work had only a practical and no theoretical bearing, but in the course of time the intelligence tests have been found useful as measuring devices in the investigation of scientific problems such as the large problem suggested by the words, heredity and environment. In recent years interest has revived in the more specific tests, because developments in the statistical analysis of correlations between tests seem to make it possible to identify a few primary mental abilities and so to furnish a more analytical account of the individual's ability than is possible from the use of the intelligence tests alone. This type of analysis is to be called an Anglo-American rather than distinctively an American enterprise. The practical application of test methods in schools and clinics (the first psychological clinic having been set up at the University of Pennsylvania about 1897) has been extraordinary.

The word 'personality' came into frequent use about 1920. The psychiatrists had found it a convenient term to cover the comprehensive study of an individual's traits and life

history. The psychologists saw that the testing of abilities was not sufficient and that their job included an appraisal of the individual's motivation and social adjustment. Considerable difficulty has been encountered in adapting the idea of a test to the study of personality. In a test you have a standard situation and task and you find it quite possible, usually, to secure good cooperation so that each subject does somewhere near his best according to his ability. But in a personality study we wish to discover, not what the subject can do but what he will do, not how successful he is when well motivated but how well motivated he is when left to his own initiative, not how efficiently he works toward an assigned goal but what goals he chooses for himself and how eagerly he strives for them. Good progress has certainly been made in devising methods for discovering an individual's interests and attitudes and in utilizing the facts of the subject's life history; but even the specialists would agree that this line of study is still in its beginnings.

The need for a scientific social psychology has been felt since very early days and has been emphasized time and again in our meetings and journals. It is surprising to find as far back as 1898 a reference (18) to the 'recent tremendous growth of social psychology.' Probably a sociological rather than strictly a psychological development was in the writer's mind. William McDougall, later to become one of our group, urged in 1908 that psychology should make itself serviceable to the social sciences by discovering the motives of social behavior, and he offered a system of instincts and derived motives (16) that made a strong appeal to many of us and in fact quite put social psychology on the map as a subject to be taught in our departments. Though the instinct doctrine was seriously questioned in the early 1920's, many psychologists by that time had adopted this field of study and were turning up a variety of materials of social significance. Many were asking if it were not possible to do some real experiments in social psychology. Ways of measuring the opinion of an individual or group were devised, and the effects of propaganda on opinion were examined. Experiments in some variety have

been tried, though the whole field still presents a scattered rather than a well-organized appearance.

Still other lines of work could be added to the preceding list in support of the thesis that American psychologists have not only been busy for these fifty years—everyone admits they have been busy—but also that they have worked to good purpose. Largely through their efforts, but of course not entirely by any manner of means, the science of psychology is much farther advanced than in 1892. Our field lies nearer home than that of several other sciences and for that reason our discoveries are not as startling and exotic as the discoveries made in those other sciences. Freud's discoveries may be cited as an exception, but most of us think they require confirmation, and in proportion as they are confirmed they seem to become less startling and more reasonable. A skeptic—and there are skeptics who still deny the claims of psychology to anything better than the vague hope of a science—might challenge us to point out a few clean-cut discoveries instead of leaving the matter in such general terms. This challenge could be met in detail were the time sufficient. But is it not fair to make the following comment?—While a single crucial experiment often suffices to squelch a false hypothesis, we must have many-sided and detailed investigation in order to get an adequate positive conception of a complicated function like seeing or hearing or learning or thinking.

Looking back over the half-century one is tempted to divide it into decades and to ask what was the outstanding characteristic of each decade. So sharp a division would of course be artificial. Then, too, our history shows new things coming in from time to time rather than old things passing out. Behaviorism came in at a certain time but continued in full strength for much more than a decade, and the same has been true of many other theories and lines of work. The following sketch is subject to these restrictions.

In the first decade (1892-1901) American psychology was rapidly establishing itself and exploring its field in various directions. Several lines of work were introduced that have

proved to be fruitful ever since. By stretching the decade a little we can include the beginnings of the practice experiment, of the animal-learning experiments and related work on the brain, and of several now classical experiments on eye movements, inverted vision and sound localization, as well as important beginnings in the field of tests, ratings, and correlations.

The second decade (1902-1911) was more controversial in tone. It might be called the period of childhood diseases, or, in better keeping with our general metaphor, the period of adolescent instability. The schools broke out. First the structural school and in opposition to it the self psychology and a special form of functional psychology. Their onset slightly preceded the decade. Soon psychoanalysis began to come in from Austria and purposivism from Britain. Meanwhile our native psychologists were slowly coming down with behaviorism, first in a mild form as more and more of them, from 1904 on, expressed a preference for defining psychology as the science of behavior rather than as an attempt to describe consciousness. Most of us proved to be immune to the virulent form of behaviorism which appeared in 1912 and 1913, and excited active discussion for the next few years. At the same time Gestalt psychology was incubating in Germany but it did not reach us to any extent for another ten years.

The third decade (1912-1921), stretched a little at both ends, included a large share of the rather successful efforts to find practical applications for the young science of psychology. Use was found for our methods and results in the fields of education, law, business, and industry, and in the investigation of drugs, fatigue, ventilation; and when America entered the War our psychologists laid aside the controversies of the schools and joined forces in what proved to be a reasonably successful effort to make our science of service to the Army and Navy.

The fourth decade (1922-1931) was a period of rapid expansion of the body of American psychologists, and a period of great public interest in what psychology might have to

offer. Interest in the schools revived, especially in behaviorism and purposivism, along with the new claims of Gestalt psychology. In promoting their system on this side of the Atlantic (13), the Gestaltists assumed as a matter of course that we were all structuralists and associationists, and they took little notice of our tradition of broad and rather unsystematic functionalism. They introduced some welcome novelties into our thinking and research but did not greatly deflect the course of our activities.

The fifth decade (1932-1941) does not stand out so clearly. It cannot be sharply separated from the fourth but certainly seems to be characterized by signs of maturity. American psychology is finding itself again, and at a higher level than was possible in the first decade. The old schools are less blatant and their merits and limitations are better recognized. If any new schools have arisen of late—say, organismic and operational psychology—they do not show the feverishness of the older schools in the day of their prime. The period is characterized by interest and increasing success in the study of social psychology and of personality, but no less by incisive work in physiological psychology and in the fields of learning, perception, and the scientific use of tests and measurements. How the future may regard us in retrospect we cannot say, but from our own standpoint it appears that our psychology, while still young, has fairly reached the stage of maturity.

Looked at from outside the psychological fraternity has seemed to be utterly unharmonious, a house divided against itself. Other scientists and philosophers have said that "until psychologists can put their own house in order, they have no claim to the attention of anyone else," and that "a meeting of the American Psychological Association must be a perfect bear den." One who has attended many meetings through the five decades can testify that no such picture was ever anywhere near the truth. On the contrary, the personal relations of psychologists, without regard to school preferences, have been excellent. Scrutiny of our annual *Proceedings* will reveal perfect cooperation in the business affairs and publica-

tions of the Association, while the scientific programs show a surprising scarcity of papers bearing in any direct way on the tenets of the schools. There have been Presidential Addresses in support of self psychology, functional psychology, behaviorism, and the values of introspection, and a few others related to the schools. About a quarter of these annual addresses are so accounted for, but the remainder, while often concerned with broad theoretical problems, do not bear directly on the schools. A mere scattering of the other papers on the programs has to do with the schools. Papers bearing on the behavioral definition of psychology began to appear in 1908 and continued at intervals till 1925. Papers related to some phase of psychoanalytic theory appear sparsely from 1908 to the present. From 1922 to the present there have been in all about ten papers on some phase of Gestalt psychology. Of course there have been disagreements on specific questions, conflicts of evidence, differences of interpretation, but such legitimate controversies are a reason for coming together rather than for splitting apart. From time to time the suggestion has been offered that there should be two sciences, one of mind or consciousness and the other of behavior, but these suggestions have never been taken up and the general preference has obviously been for sticking together.

If American psychology were to split up today, it would certainly not be along the lines dividing the schools. It would more probably be according to field of work or technique employed. So we already have our societies for applied psychology, for psychometrics, for the study of social issues. But these groups have not really split off. They continue to meet with us and their members retain their membership in our Association. The numerical expansion of the Association continues at an astonishing rate. For the present, at least, there are definite advantages in maintaining the solidarity of all psychologists, pure and applied, physiological and social.

In the early years the proper affiliation of psychology came up several times for discussion, the question at that time being whether psychology belonged more appropriately and usefully

in the company of philosophy or of the natural sciences. Were the question of affiliation to be raised today, the realistic alternatives would be the natural as against the social sciences. We recall how eager we were to be received into the company of the natural sciences in the National Research Council, during and after the previous World War, and how gratified we were when that connection was established. Shortly after that war the social sciences set up a research council and invited our Association to participate. At first we declined the invitation on the ground that psychology did not belong with the social sciences, but when the invitation was renewed we concluded to strengthen our social contacts and accepted membership in the Social Science Research Council, without by any means giving up our natural-science affiliation.

Both connections seem entirely appropriate. Some of our number are working in close cooperation with the physiologists, and some with the sociologists and anthropologists. The techniques, concepts and necessary acquaintance with related sciences differ greatly for physiological and social psychology—so much so that the splitting of psychology along that line appears to some of our members a distinct possibility. Other observers from outside have predicted that psychology would eventually cease to exist as a unit, its divergent interests being absorbed by physiology and sociology. In such a division it is difficult to see what would become of those parts of psychology which have been most central for the past fifty years. Would it be physiology or sociology that would take over the topics of learning, perception, motivation, individual differences and correlations? From present indications it is much more likely that psychology will remain a unit, branching out in various directions, affiliated with both the natural and the social sciences and also with several practical interests, as education, medicine, and industry. The mere size of our group and the diversity of our investigations are not sufficient reason for making a division, for they are small in comparison with what we see in chemistry, and the chemists, pure and applied, remain a well-knit group with a powerful

esprit de corps. Our own strong sense of solidarity is a decided asset in times of emergency like the present, and will remain an asset as the world moves forward into a new era when, by all logic, the science of psychology and its applications to human welfare will have a much larger rôle to play than in the past fifty years.

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THE AMERICAN PSYCHOLOGICAL ASSOCIATION, 1892-1942

BY SAMUEL W. FERNBERGER

History seems to have a way of repeating itself. When James McKeen Cattell¹ reviewed the history of our Association at the 25th Anniversary in December, 1916, Europe was at war and the United States was to become actively involved in less than three months. Today I address you after American involvement in the second World War almost exactly nine months ago.

I am indeed fortunate with regard to the size of my audience today. Starting with a membership of 31 in 1892, the Association had grown so that, at the half-way mark, Cattell reviewed the history of the first twenty-five years in 1916 to a membership of 375, while this present address is to a total present membership of 3231. The change for the first and second 25-year period is almost a geometrical progression. If this should continue we may expect to have 30,000 members by 1967 and 300,000 by 1992, on our 100th birthday. The quantitative factor has changed greatly but, fortunately, the quality of the membership has remained high during all of the years of our existence—a high degree of scientific and professional training has been and still is the fundamental requirement for election into the Association.

It would seem worth while to start with a record of the facts of the organization meeting in 1892. The published reports of the preliminary meeting and the first and second meetings of the Association were published together only in 1894.² And it was not until the third meeting in 1894 that

¹ J. McK. Cattell, Our Psychological Association and research, *Science*, 1917, N.S. 45, 275-284.

² The report of the preliminary meeting and of the first and second annual meetings appears to have been published as a privately printed pamphlet, which bears no date, but has the imprint of Macmillan & Co. The official proceedings of the Association were subsequently published in the *PSYCHOLOGICAL REVIEW* from 1895 to 1903, and in the *Psychological Bulletin* from 1904 up to the present time.

a constitution was adopted. Presumably these early reports are from the pen of Joseph Jastrow, who was appointed secretary at the preliminary meeting, but they are unsigned.

The published facts of the founding indicate that seven psychologists met at Clark University on July 8, 1892, on the invitation of G. Stanley Hall, to discuss the advisability of forming an association. It would be most inappropriate if the names and institutions of this small group were not read at this time and place. They were:

G. Stanley Hall, Clark University
George S. Fullerton, University of Pennsylvania
William James, Harvard University
Joseph Jastrow, University of Wisconsin
George T. Ladd, Yale University
James McKeen Cattell, Columbia University
James Mark Baldwin, University of Toronto.

This group constituted themselves a committee to determine the place, time and program for the next meeting and to report a plan of organization and Hall, Fullerton and Jastrow were constituted an Executive Committee. Fullerton invited this fledgling organization to meet, for the first time, at the University of Pennsylvania on December 27th of that same year. Jastrow was appointed Secretary. The group then proceeded to elect twenty-four other members representing eighteen institutions. Six papers were read in the afternoon and evening and, finally, there is a notation—which I add because it will date this meeting in the minds of some of you—that Jastrow asked the cooperation of all members for the Section of Psychology at the World's Fair, which was to be held in Chicago. It was returning from this meeting at the Chicago World's Fair that Hermann von Helmholtz received an injury on shipboard from which he never recovered.

Such are the published facts about the preliminary meeting. But the historian would like to know more than is told in this account—something of the discussion, something of the correspondence which preceded its calling, why twenty-six of the thirty-one individuals accepted membership by mail

beforehand while five *additional* members (including Münsterberg and Titchener) were elected actually at the meeting.

It seemed fortunate that two of the original seven at the organization meeting are still living and active in Psychology. So I wrote to Dr. Cattell and to Dr. Jastrow regarding their memories of this most important event in our history. I would like to quote part of their letters in reply.

Under date of December 17, 1940, Professor Cattell writes as follows: "I regret to write that I have no information concerning what happened prior to the calling of the organization meeting of the Psychological Association in 1892. The call came as a complete surprise to me and *unfortunately I was not able to be present* [italics mine]. I have always assumed that the idea was Hall's. James did not get to the first meeting which was held at Philadelphia, and was not at the beginning particularly favorable to the organization. If the plan was proposed to Hall by anyone else, or if he had advice prior to the organization meeting, it must have been from a younger man, such as Sanford. When I made the address on the twenty-fifth anniversary, I called Hall 'our Socrates and midwife' and I am still disposed to do so. Jastrow was at the organization meeting and may have more information than I have concerning the situation."

So your historian consulted Professor Jastrow and received the following reply, dated January, 1941. "*I was not present on July 8, 1892 at Worcester* [italics mine]; presumably I was in Maine. I was however invited to join. So far as I can recall, the entire project of forming the Association was Hall's. I was present at a later meeting at Xmas holiday time."

What actually happened on July 8, 1892, probably will never now be known. Certainly there is now no one living who can supply the details. There is really no evidence that the meeting was ever actually and physically held—except that the names of six men who presumably read papers are listed. And all of this leads to a possible conclusion—and I say this as an ex-Secretary of the Association—that one cannot always trust the printed minutes of a Secretary as evidence of what actually happened at any meeting.

But there seems little doubt that the idea of such an organization was Hall's. The testimony of Cattell and Jastrow is unanimous on this point. And it would also seem to be true by process of elimination. We know, from their own testimony, that it was neither Cattell nor Jastrow and that James was, at first, adverse to the idea. It is not likely to have been Fullerton, who was more philosopher than psychologist. It was not likely to have been Baldwin, who was then relatively isolated at Toronto. This leaves only Hall and Ladd, and the possession of such an idea fits the temperamental pattern of Hall rather than Ladd—Hall who had already organized and founded the *American Journal of Psychology*, for example, and who had established Clark University as a research institution. Because it so well fits into his temperamental pattern and in the face of no evidence to the contrary, it would seem that one may safely follow the lead of Cattell some twenty-five years ago and designate Hall as the 'Socrates and midwife' of our Association.

Even though somewhat veiled in mystery as to details, here was the beginning of our Association. It seems unwise to spend the restricted time allotted to this paper in outlining the developmental history³ of this group. What I shall try to do is to bring my previous history down to date by means of a series of charts. It does not seem worth while to discuss minute changes in the form of the constitution and like matters.

MEMBERSHIP

The first figure graphically represents the growth of membership—the solid curve for members and the broken curve (beginning in 1926) for associates. There has been a surprisingly steady rise in the membership curve—slowed down for a matter of some seven years after the establishment of the Associate grade, but again increasing sharply since 1936. The curve for Associates rises extremely regularly and very sharply from 1926, when this class was established, to the present time.

Last year the consideration of the extreme inequalities be-

³ S. W. Fernberger, The American Psychological Association. A historical summary 1892-1930. *Psychol. Bull.*, 1932, 29, 1-89.

tween the number of members and associates, led to a changing of the criteria for membership which can now be acquired without research publication, always something of a difficult

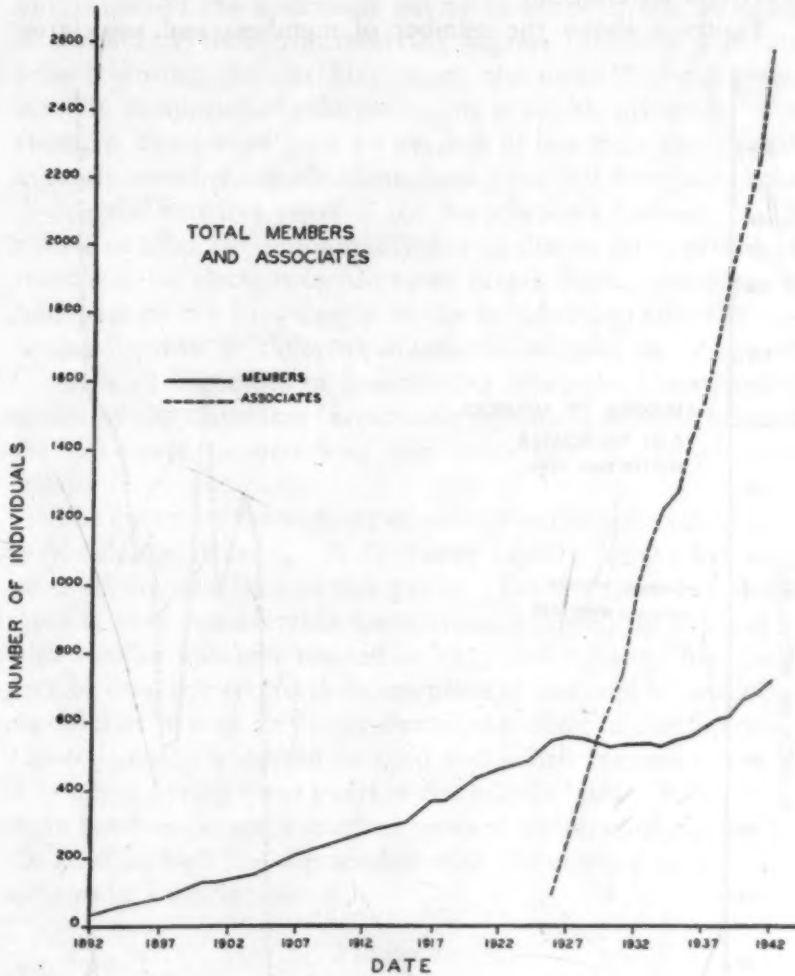


FIG. 1

hurdle for many psychologists. This has been especially true in recent years when so many psychologists have been directing their full time and energy toward important practical applications of psychological techniques which do not necessarily

lead to published research. It is unfortunate that this curve cannot include the elections to full Membership of the present business meeting, so that we could see the effects of this change in criteria for election.

Figure 2 shows the number of members and associates

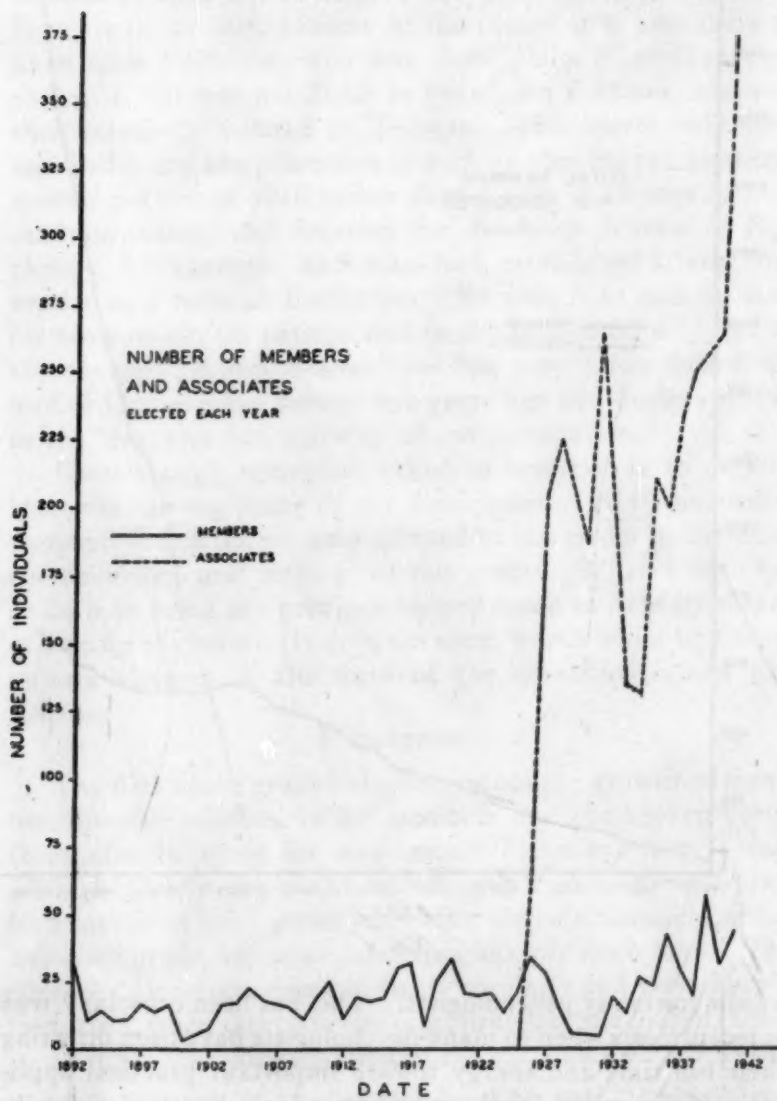


FIG. 2

elected each year—the solid line for members and the broken line for associates. The curve for members is most irregular but shows a general but very gradual upward trend. When one considers the enormous yearly increase of the numbers of trained psychologists receiving degrees from our graduate schools during the last fifty years, the upward trend seems small in comparison to the increasing available material. For example, there have been an average of less than three times as many membership elections during the last five years than during the first five years of the Association's history. Such a state of affairs is undoubtedly due to the repeated raising of standards for election to full membership during these years. And part of the irregularity in the membership curve is undoubtedly due to different standards adopted by different Councils of Directors in interpreting what the Constitution means by the statement 'acceptable published research beyond the doctorate dissertation,' for years one of the election criteria.

The curve for the number of associates elected each year is very different in form. It rises very rapidly for the first two years of the existence of this grade. For the next five years there is very considerable fluctuation, followed by two years with smaller numbers elected in 1933 and 1934. This trend may be due, in part, to the absorption of the pool of available material or it may be partly due to the effect of the financial depression which started in 1929 and which became particularly acute during these years of the middle '30's. Since 1934 there has been again a marked upward trend, culminating in the all-time-high last September with the election of 372 Associates in a single year.

FINANCES

The next three figures will have to do with the finances of the Association. These are given separately from the finances of the Association's publications. The major part of these journals—the *PSYCHOLOGICAL REVIEW*, the *Psychological Index*, the *Psychological Monographs*, the *Psychological Bulletin* and the *Journal of Experimental Psychology* (of which the

Psychological Index has been discontinued) were acquired in part by purchase from and in part by gift of Howard C. Warren. The *Journal of Abnormal and Social Psychology* was acquired by gift of Morton Prince. The *Psychological Abstracts* was established by aid of a subvention from the Laura Spelman Rockefeller Foundation. Curiously, the period

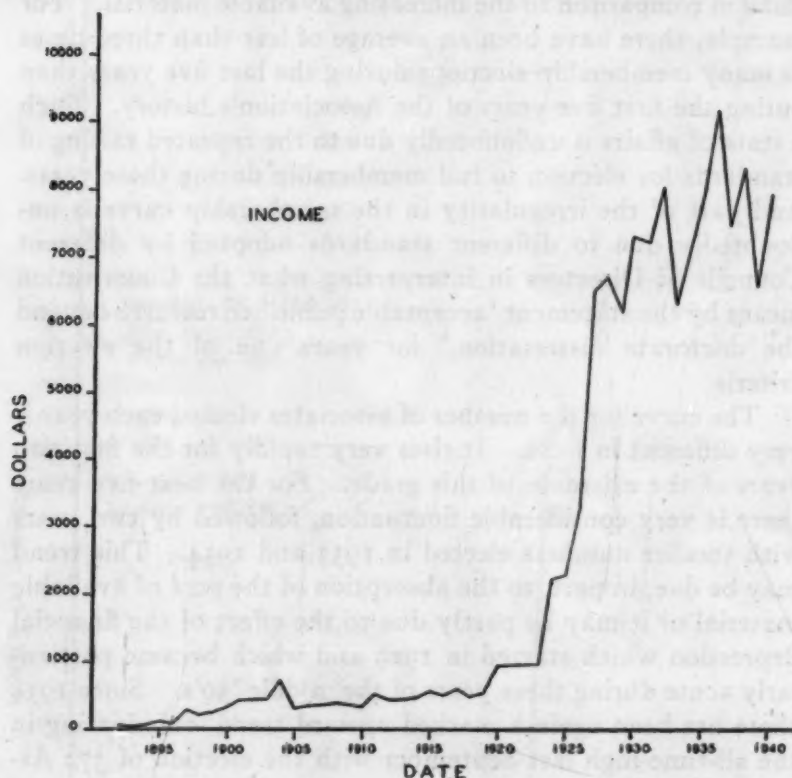


FIG. 3

covered by this acquisition by the Association of so many journals covers only the short bracket of three years: 1925-1927. One must consider this fact because of the influence upon the Association's finances.

At the time of the founding of the Association in 1892, the dues were set at three dollars a year. In 1904 the surplus became so great that the dues were reduced to one dollar a

year. This may have been too optimistic a reduction; yet two years later, in 1906, a recommendation of Council that the dues be increased to two dollars was referred back to Council. In fact, the increase to annual dues of two dollars was not again suggested until 1917 and was not finally voted until 1919. Four years after this, in 1923, the annual dues were increased to \$5.00. After the purchase of the journals, in 1925, the dues were set at \$7.00 for members and \$3.00 for associates. Finally the present scale of \$10.00 for members and \$6.00 for associates became effective in 1936, of which \$3.00 from the dues of each class of membership is paid for the subscription to *Psychological Abstracts*.

Income. These facts are reflected in the income curve in Fig. 3. Until 1925, the income in any one year never totaled as much as \$1,000. Since 1925, with both increased dues and increased membership, the curve rises sharply and has continued to rise, but more slowly in recent years, solely as a function of increased membership. All fluctuations in the income curve may be explained in terms of changes in the dues because these have been the sole source of income of the Association.

Expenditures. Figure 4 shows the expenditures of the Association over the period of our history. Certain facts should be remembered in interpreting this curve. Up to the year 1905, the Secretary-Treasurer was allowed only whatever he spent for stationery and postage. In 1905 he was also allowed travelling expenses to attend the annual meetings. Only in 1913, when the Membership was almost 300, was there voted a stipend of \$250 per year to the Secretary-Treasurer to cover both travelling expenses and secretarial aid. In 1921, when the offices of Secretary and Treasurer were separated, the stipend of the Secretary was continued at \$250 and the new Treasurer was voted \$50 a year. Subsequent increases in the stipend of the Secretary were voted in 1922 to \$500; in 1923 to \$750 and in 1926 to \$1,000 per year. The present 1942 Budget carries a Secretary's stipend of \$2,000 and a Treasurer's stipend of \$400.

The form of the curve is very similar to that for income—

slowly rising from the founding until 1922 and then rising very rapidly from that date to the present time.

Balance on hand. A comparison of the last two curves would indicate that the receipts and the expenditures never exactly balanced. Figure 5 shows the outcome of these differences or the balance on hand at the end of each fiscal year.

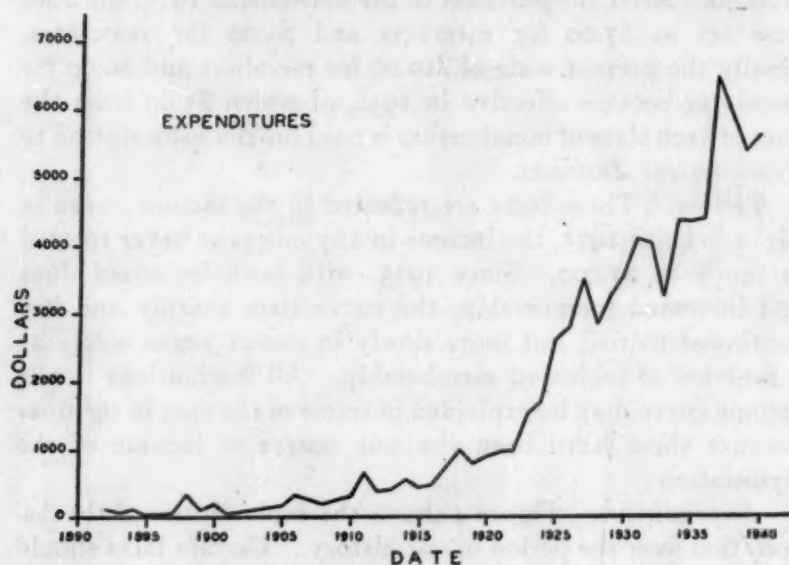


FIG. 4

Expenditures for the first fifteen years were extremely small and hence a balance gradually accumulated until, by 1909, it reached a maximum of more than \$3,000. From 1910 to 1925 the curve drops, at first slowly and then more rapidly, indicating greater expenditures than receipts for these years—until in 1923 little more than \$1,000 remained in the treasury as a backlog. This situation was the basis for the increase of the dues to \$3.00 per year in 1923 and, from then on, the curve has risen sharply.

There is justification for the establishing of a reserve of this size. It was recognized by Council in 1926 that they must adopt a definite policy to build up a new and large reserve to protect the Association's journals and especially to protect and

aid in continuing the *Psychological Abstracts* when the Foundation's subvention should be exhausted. Indeed, the Association is now in the publishing business to an extent that makes such a working capital essential. And it must be recognized that the publishing of this selected group of journals is one of the chief contributions which the Association can make to the advancement of psychology as a science.

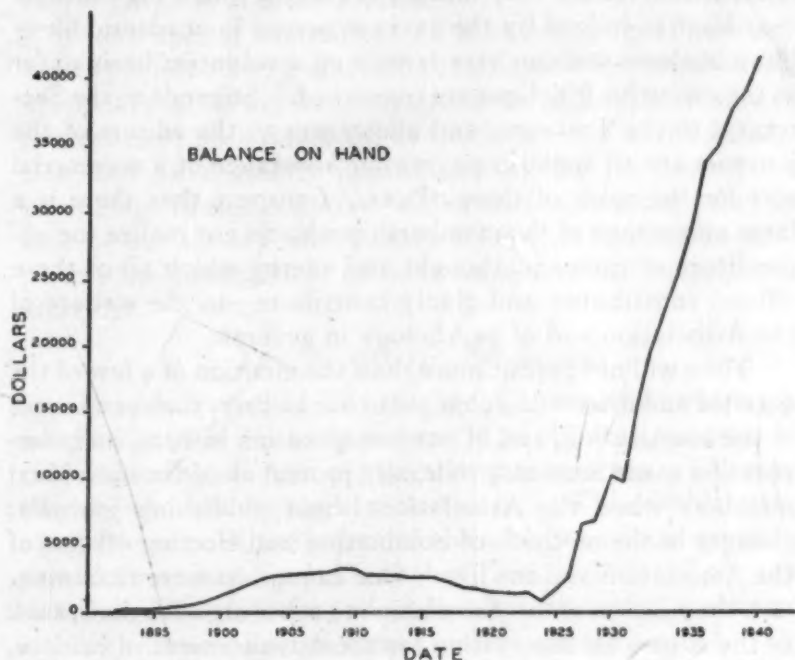


FIG. 5

In this connection, I cannot refrain from mentioning one factor which made the building up of this reserve possible in such a short time. The Association agreed to pay Howard C. Warren a total price of \$5,500 for the journals of the Psychological Review Company (which he owned outright)—retiring notes at the rate of \$500 per year. By 1929 a total of \$3,500 had been paid to Warren and the Association was three payments ahead of schedule. In this year Warren very generously presented the rest of the stock of the Psychological Review

Company to the Association, thus cancelling the unpaid notes. This action was especially generous because the original price for the group of journals was considerably below the actual value of the journals purchased by the Association.

GENERAL DEVELOPMENT

Thus far I have tried to indicate the development of the Association, from a very meager beginning into a big business—at least as judged by the average person in academic life—but a business still run very largely on a volunteer basis so far as the executive functions are concerned. Stipends to the Secretary, to the Treasurer and allowances to the editors of the journals are all spent in paying for assistance of a secretarial sort for the work of these offices. I suspect that there is a large percentage of the membership who do not realize the expenditure of time and thought and energy which all of these officers contribute—and gladly contribute—to the welfare of the Association and of psychology in general.

Time will not permit more than the mention of a few of the detailed and interesting changes in our history, such as changes in the constitution, and of our incorporation in 1925, an incorporation made necessary to legally protect all of the individual members when the Association began publishing journals; changes in the methods of nominating and electing officers of the Association and the like. One cannot do more than mention the relation of the Association to other organizations, such as the American Association for the Advancement of Science, the National Research Council and the Social Science Research Council, to the last two of which the Association annually elects member representatives; and of Sections and Branches of the Association formed to hold regional meetings.

It seems worth while, however, to note the most interesting history of the relation of the Association to clinical psychology. The older members will remember the long battle within the Association which eventuated in the forming of a Section of Clinical Psychology within the Association with authority for the certification of psychologists for clinical work. When this battle was finally won, only twenty-five members applied for

certification; thus the whole project was abandoned four years later, even though the reduction of the certification fee from \$35 to a bargain price of \$5 failed to increase the number who applied.⁴

In a history such as this, one must mention that the Ninth International Congress of Psychology, which met in New Haven in 1929, was arranged by the Association and was carried through with great success.

Many special committees on a variety of problems have been appointed and financed by the Association for the study of special problems. In many cases, the findings of these committees have been published as special reports of the Association and have greatly contributed to the development of psychology in this country. All of these and many other details of our history would be interesting, but time does not permit the development of these aspects of the Association's activities.

THE SCIENTIFIC PROGRAMS

Programs. Article I of the first Constitution, which was adopted in 1894, reads: "OBJECT. The object of the Association is the advancement of psychology as a science. Those are eligible who are engaged in this work." This simple statement covers both the object of the society and the qualifications for membership. Through various revisions of the constitution, this statement of object has remained unchanged although the wording may have been somewhat altered. The final statement, in the Certificate of Incorporation in 1925, reads: "That the object of this society shall be to advance psychology as a science."

One of the principal methods employed to accomplish this object has been the holding of annual meetings at which members might present scientific papers, which were then thrown open to discussion by the members. Inasmuch as the core of the Association has always been the holding of the annual meeting—indeed for many years this was the sole function of the society—it seems proper to spend the rest of the time

⁴ For a list of those certified, cf. Fernberger, *op. cit.*, 51.

allotted to this paper in a description of this aspect of our activities.

Attendance. Figure 6 indicates attendance at the meetings of the Association, held during the Christmas holidays in

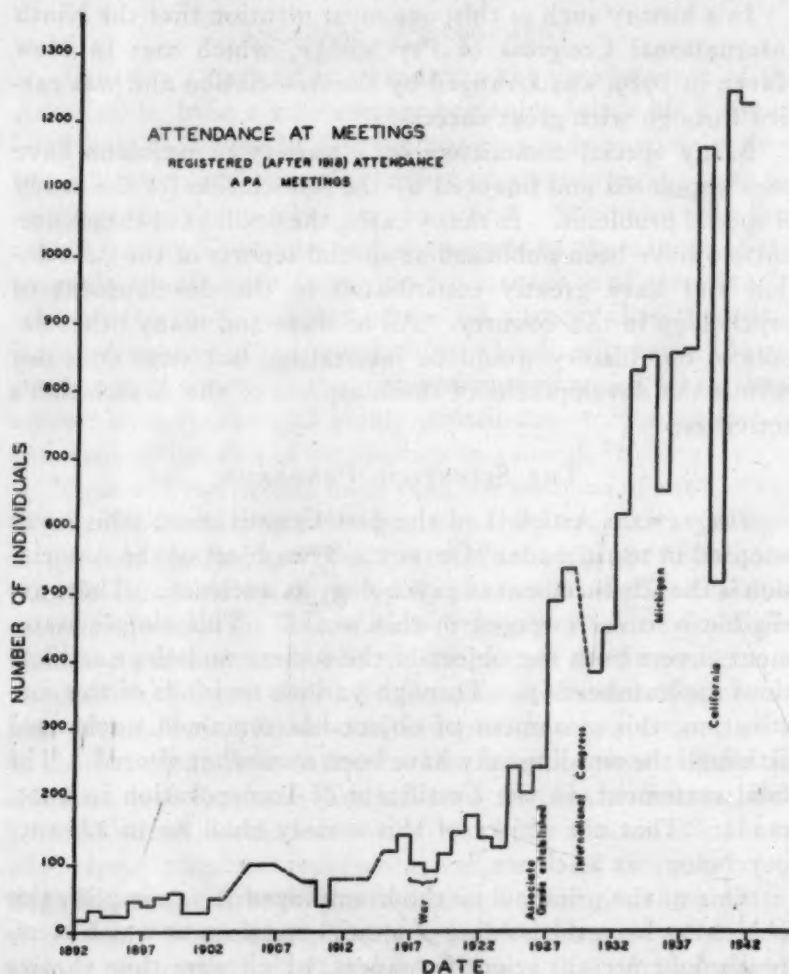


FIG. 6

earlier years and more recently in early September. Since 1918 registration has been taken at the meetings. Dotted lines indicate years for which no records are available except in 1929 which was the year of the Ninth International Congress

of Psychology when the annual meeting of the Association was omitted.

The curve rises slowly at first with an attendance of practically 100 persons in 1905 and 1906 when the total membership was about twice this number. Ten years after this the attendance had never risen to 150 in any one year and it dropped to 100 in 1917 and below this number in the second year of the First World War. From 1918 on, the rise in attendance figures was slow until 1928, a year which marked a very rapid rise to nearly 500. This sudden rise was the result of the establishment of the grade of associateship. From this year on the rise has been rapid but not continuous, reaching an all-time high in 1940 at the Pennsylvania State College meeting of slightly more than 1200 persons. A statistical treatment of last year's meeting indicates that more than 35 per cent of the members and more than 23 per cent of the associates were in attendance, besides almost 400 persons who were either newly elected associates or individuals not affiliated with the Association.

There are two sharp reversals in the curve in recent years. In 1936 there were some 200 fewer members at a meeting held in Michigan than the year before. In 1939 when the Association met at California there were some 650 less than the year before at Ohio State, and more than 700 less than the following year at Pennsylvania State College. These facts would seem to indicate the disadvantage of holding meetings of the Association too far west—at least at the present time.

Number of scientific papers. Figure 7 indicates the number of scientific papers presented on the program each year. Although this curve is very irregular, there is a tendency for it to rise steadily and then more markedly after 1931.

It may be amusing to review the first program in 1892 when 12 papers or reports were presented—the last 'paper' being some six minor studies from Clark University, so that really 17 studies were presented. Hall gave the Presidential Address entitled 'The History and Prospects of Experimental Psychology in America.' Bryan gave a paper in Educational Psychology; Münsterburg and Jastrow gave general papers

and the other 14 were reports of experimental results more or less along Wundtian lines. Witmer and Nichols each presented two papers; single papers were given by Cattell, Pace and Bryan; and finally Sanford presented results of minor

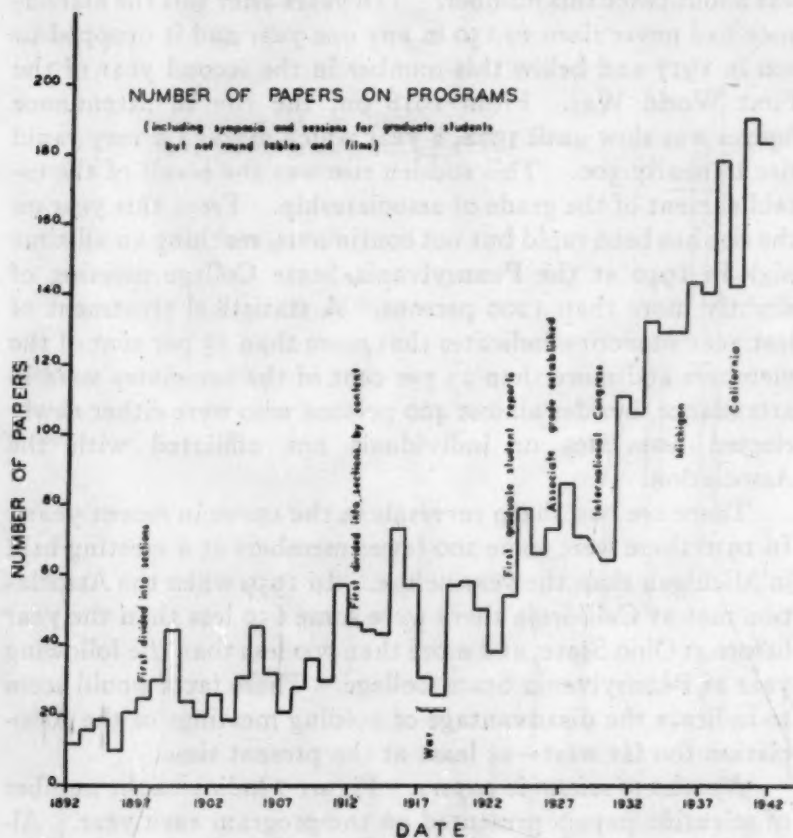


FIG. 7

studies by T. L. Bolton, Reigart, Calkins, Dresslar and two by Bergström.

In 1897 the programs were divided into sections, when the program grew to the volume of 25 papers in a single year. By 1911 the program listed 57 papers and this led to the dividing of the program into sections according to topic and subject matter. During the two war years of 1917-18 the number of

papers on the program dropped below 30. In 1922 the experiment was tried of introducing short reports by graduate students, which led to another increase in the number of titles. After the establishment of the grade of associate the curve rises markedly and surprisingly regularly (with the exception of the réversion for the California meeting in 1939) and reached the all-time high of 190 papers at the Pennsylvania State College meeting the next year. The numbers include symposia, round-table discussions and the more recent introduction of scientific films.

Fields covered by the papers. It would seem that the analysis of the papers presented throughout the years might give some indication of the interests of the members throughout our history. Hence an effort has been made to break down the categories into ten arbitrarily selected and arbitrarily defined fields. These are (1) General (including theoretical and philosophical papers); (2) Perception (and sensory processes); (3) Learning, Memory and Thinking; (4) Physiological, neurological and reaction; (5) Educational; (6) Abnormal; (7) Social; (8) Clinical; (9) Applied (including vocational and industrial), and (10) Animal.

Such a differentiation is difficult and must always be arbitrary. Authors seem frequently to obscure what they are going to say by the title and even by the abstract. A surprisingly large proportion of these papers apparently never reached journal publication and hence one could not turn to the fuller published account. I have been on too many Program Committees not to realize that the placing of a particular paper into a particular program cannot be taken as assurance of content. I am sure that someone else making this analysis would obtain somewhat different results. Nevertheless I am equally certain that the following curves indicate a true and adequate picture of the different fields and hence are worth analysis and description. The results will be found in Figs. 8-10.

General. The curve for general, philosophical and theoretical papers rises slowly to a maximum of 28 such papers in 1899, or more than half the papers presented in that year.

From then on the curve drops to more or less of a dead level. In only three years since 1906 have there been more than 10 such papers in any one year (and usually the Presidential Address was one of this sort), while, since 1926 not more than 8 such papers were presented at any one meeting of the Association, in spite of the great increase in both membership and the total number of papers on the program. One may safely conclude that the Association as a whole has become less theoretical and less philosophical as time has gone on.

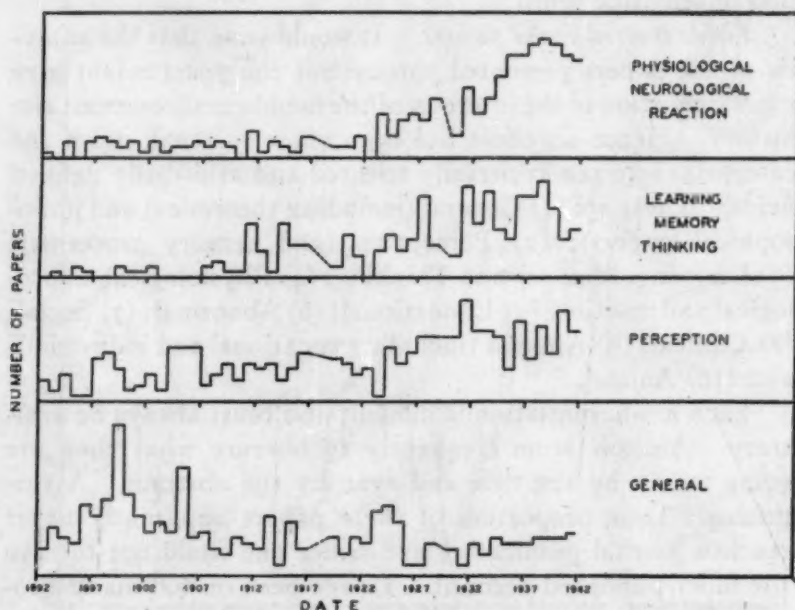


FIG. 8

Perception. The curve for perceptual and sensory processes runs along more or less at a dead level, with never more than 10 such papers in any one year up to 1927. Since that date there has been a slight increase in the number of such papers on each program—the number falling below ten in only three years. One can conclude that there has been a steady and continuing interest in this type of problem throughout our history but that the increase of interest has not paralleled the increase in membership.

Learning, memory and thinking. During the first fifteen years of the Association's history there are only 10 papers which I think should be included in this category. Since that date at least one such paper has appeared on the program except for the single year of 1922. The interest has been gradually increasing and 10 or more such papers have appeared on the program in six of the last ten years.

Physiological, neurological and reaction. There has always been an interest in this topic among the Association membership—an interest which remained small until the last decade but which has increased markedly since that time. Still one must conclude that it is a type of interest which developed late in the history of the Association.

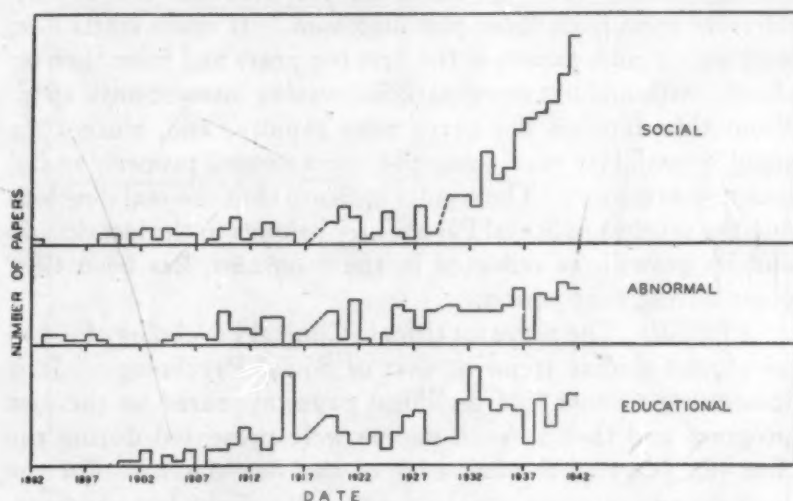


FIG. 9

Educational. It was this category which gave the greatest difficulty for differentiation. So many learning papers can be classed as Educational or placed in the category already discussed. So many other papers may be designated either Educational on the one hand, or Social or Clinical on the other. The tendency, in the present analysis, was to place a given paper in some category other than Educational if it fell as readily in the one classification as the other. With these

strictures on the method of classification employed, there are only 11 titles in Educational Psychology which I should be willing to include in the category in the first 16 years of the Association's existence. From then on the number of program titles increased rather slowly and with considerable fluctuation.

Abnormal. There has never been any very marked interest by the Association members in Abnormal Psychology as reflected in the programs, but this interest has been relatively continuous during the life of the Society, especially since the turn of the century. But in only one year (1940) have more than 10 abnormal papers appeared on any program.

Social. The curve of the number of titles in Social Psychology which have appeared on the program has a very different form from those just discussed. It again starts low, with only 7 such papers in the first ten years and from then on shows continued but not greatly increasing interest until 1932. From this date on the curve rises rapidly, and, since 1934 steadily until last year, some 38 papers seemed properly to fall into this category. The results indicate that the real development of interest in Social Psychology belongs to the last decade and its growth, as reflected in the programs, has been very great during that period.

Clinical. The curve for titles in Clinical Psychology follows an almost similar trend to that of Social Psychology. It is interesting to note that a clinical paper appeared on the first program and that 12 such papers were presented during the first ten years of the existence of the Association. For the next decade interest remained relatively slight but constant, with only one year (1906) in which not a single clinical paper was presented. From 1910 there is a marked increase in the number of papers to a maximum of 22 papers in the single year of 1916. Then the curve falls off again to a new minimum of only 8 papers in 1930. It is the period from 1912 for fifteen years which marks the development of clinical tests and most of the papers during this period have to do with the presentation and validation of such test material. From 1930 on the curve again rises, with wide fluctuations, reaching the all-time

high of 47 papers in 1940. This is the largest number of papers presented in any single category for any single year and the number comprises one-fourth of the total number of papers which appeared on the program in that year. Most of the papers during the last decade deal with clinical problems rather than the development of some specific test. The curve indi-

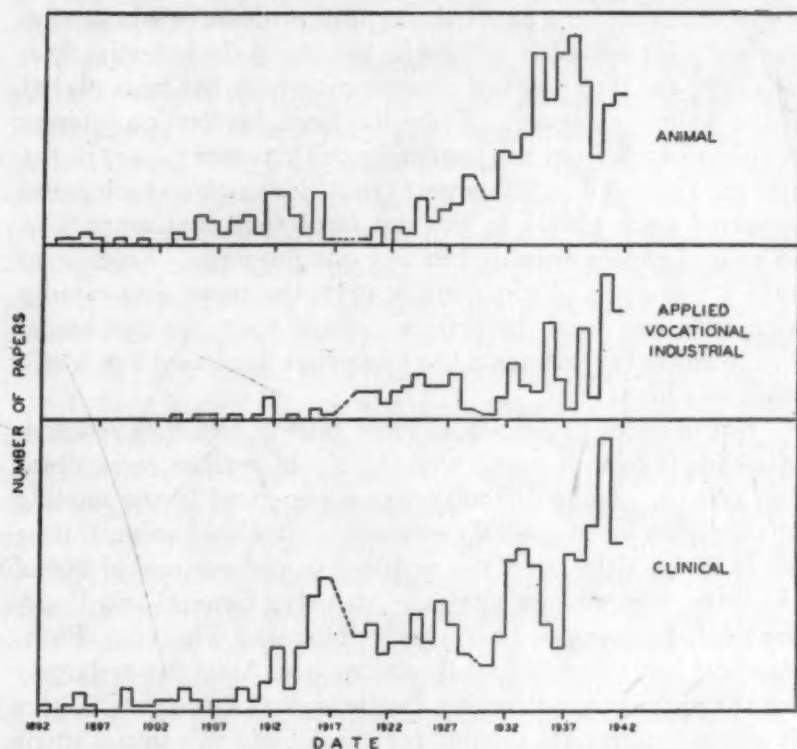


FIG. 10

cates the very large recent interest of the members in this sort of problem.

Applied, vocational and industrial. Interest in this category developed late in the history of our society. I am not willing to list a single title during the first eleven years of our existence and not more than thirteen titles in the first twenty-five years. From then on the number of titles increases, at

first slowly and in the last decade much more rapidly—with a maximum of 25 such papers presented at the 1940 meeting.

Animal. Many of the titles which have been included in this category might well have been placed elsewhere in such groups as perception, learning, reaction, social or physiological. An effort has been made to determine whether the experimenter was merely employing an animal because it was the best sort of subject to use on a particular type of problem or whether he was really interested in the *species* he used in the investigation. It is only the latter sort of experiment which has been placed in the Animal category. There has been Association interest in animal work from the beginning, with 7 such papers in the first ten years and only one year (1921) in which no such paper appeared since 1903. It was not until 1928 that more than 10 animal papers appeared in any one program. From 1930 until a maximum of 36 papers in 1937, the curve rises rapidly with only two small inversions. Since 1937 the number of purely animal experiments has somewhat decreased but is still relatively high.

But in order to determine more general trends of research interests, it seemed worth while to combine these results into two groups. Some difficulty was experienced in the naming of these two more general categories. It would seem, from a study of the titles, that the motivation and purpose of five of the categories of our analysis—namely, General-and-Philosophical, Perception, Learning-Memory-and-Thinking, Physiological-Neurological-and-Reactions and Animal was largely for the purpose of advancing Psychology as a science. Hence it seems appropriate to combine these five fields into a single category of *Academic* indicating the nature of the materials and the sort of approach to these problems. In contrast to this, the term *Humanitarian* has been given to the other category which includes Educational, Abnormal, Social, Clinical-Mental-Tests-and-Applied, Vocational-and-Industrial Psychologies. Here the point of departure and the motivation for these studies would seem to have been largely a wish to better the relation of the individual to his environment. The welfare of society was here of primary importance, in the minds of the

investigators. This does not imply any criticism of the scientific character of these investigations in the Humanitarian category nor the belief of the investigators of their importance for the development of a systematic scientific psychology. But the studies in the Humanitarian category had an immediate and practical application to the welfare of society which is so frequently lacking in the group which we have named Academic.

Figure 11 gives the results of the combining of the papers at each annual meeting in terms of these two categories. There has never been a year, even from the beginning of our Association, in which papers of both sorts have not been presented. Until 1909 the number of academic papers was always greatly in excess of the number of humanitarian papers; but during this same early period the curve for humanitarian papers increased slowly. In 1910 exactly the same number of papers was presented for the two categories and, from this date until 1915, the curve of humanitarian papers rises rapidly—in 1914 is higher for the first time than the curve for academic papers. This superiority of the number of humanitarian papers continues through 1922, this being the period of the development of a large number of mental tests and their validation. From 1922 until 1931 is a decade during which both sorts of papers reach and maintain a new level, with more Academic papers in five years, more humanitarian papers in three years, and the same number in two years.

Since 1931 both curves have risen rapidly but not regularly. In six of these twelve years, more academic papers were presented while more humanitarian papers were presented in the other six years. But, during the last three years, the number of humanitarian papers has been very greatly in excess of the Academic group. In 1940 there was a total of 126 humanitarian papers against only 74 in the academic group. Indeed, during the last three years, the number of academic papers falls below the number presented in any of the three years previously. The maximum of the curve for academic papers falls in 1938 with 91 titles.

Before we leave the question of programs, it seems worth

while to say a few words regarding our one previous anniversary—the twenty-fifth Anniversary meeting of 1916. Just before this meeting, which was still held during the Christmas

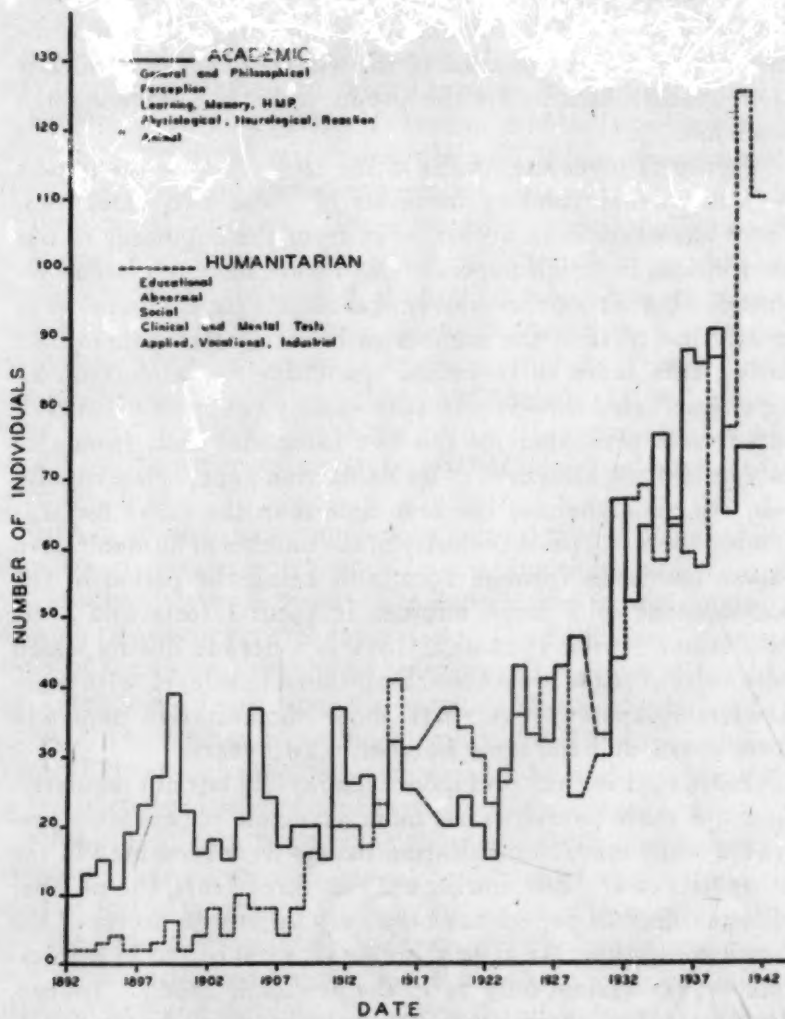


FIG. 11

holidays, Woodrow Wilson had just been reelected on a peace program and with the slogan "Too proud to fight." Nevertheless it is my clear memory that we expected shortly to be in

the war which had been raging on the European continent for more than three years. There were four special papers on that program and certainly one paper reflected this attitude—that of G. Stanley Hall's, entitled 'Psychology and the War.' Joseph Jastrow read on the 'Varieties of Psychological Experience' and J. McKean Cattell on 'Our Psychological Organization and Research.' The fourth paper pointed to the future and, indeed, was prophetic. It was by John Dewey and was entitled 'The Need for Social Psychology.' The results, just given, indicate how his point of view was heeded and it has developed productive research.

CONCLUSION

This then is a picture of our organization as it exists today, after fifty years of existence. Our present membership is more than 3200, all elected because of technical qualifications of psychological training and psychological interest. Of these almost exactly 25 per cent are members and 75 per cent associates—although experience of the present business meeting may change this picture. The primary function of the Association is still the development of psychology and this is accomplished in two ways:

- (1) The scientific programs at the annual meetings and
- (2) The publication of the six journals owned by the Association.

In addition the Association has eight affiliated organizations which, in the order of their date of affiliation, are the Eastern Psychological Association, the Rocky Mountain Branch, the Washington-Baltimore Branch, the Psychometric Society, the Society for the Study of Social Issues, the American Association for Applied Psychology, the Midwestern Psychological Association, and the Western Psychological Association. Besides these, the American Psychological Association supplies delegates, who represent the Association, to the following organizations, either by election or appointment: the American Association for the Advancement of Science, the National Research Council, the Social Science Research Council, the American Documentation Institute, the Ameri-

can Standards Association, and the Inter-Society Color Council.

And further, in an effort to maintain high scientific standards within the Association, there are Standing Committees on Precautions in Animal Experimentation, on Psychology and the Public Service, on Scientific and Professional Ethics, and on Publicity and Public Relations. All of those different functions follow rather closely the object of the society 'to advance psychology as science.'

But the duty of the historian should be not only the ordering and interpretation of facts of the past. It is also his duty to study past and present trends and try to extrapolate these into the probable picture of the future. Most certainly the trends point definitely in a single direction—namely, the gradual development of the Association from a purely scientific organization, primarily interested in those aspects which I have called 'academic,' into a professional organization more largely dominated with those practical applications which I have designated as 'humanitarian.' That such a development conforms to the present world trend cannot be questioned. And the development of this new point of view as evidenced by the kinds of papers presented at the scientific sessions of the Annual meetings is evident.

That this development may be very rapid is indicated by the vote of the Association last year in regard to the extension of the functions of the Secretary's office. The report of a special committee to study the project is worth reading.⁵ In the democratic fashion which has characterized our Association, the Committee attempted to obtain facts regarding the attitude of the membership. The results of this questionnaire made the recommendations of the Committee almost mandatory, even including an increase of the dues by one dollar per year to establish a permanent secretaryship; and the business meeting of the Association placed itself on record for Council 'to bring before the 1942 meeting the necessary recommendations for any needed constitutional amendments, change in dues, and the definition of the functions of the Secretary.' It

⁵ *Psychol. Bull.*, 1941, 38, 849-865.

is this last phrase, 'the definition of the functions of the Secretary,' which I believe is the important one which points toward the change in form of the Association. The new office of the Secretary would include not only the present functions, but such activities as a placement service, promotion service, a public relations bureau and even the attempt actively to interest new members in joining the Association. Specific suggestions received by the Committee and quoted in the report by the Committee included such procedures as a 'well-organized syndicated feature, sponsored by the A.P.A. appearing once a week'; that the secretary travel about and visit laboratories; and that he sponsor 'a responsible popular magazine in psychology.' There can be no quarrel with these recommendations—they are in accordance with the trend of the times and with the development of psychology, and are completely in accordance with the desires of the majority of the membership of our democratic organization. But I wonder what the historian will give as the picture at our 100th Anniversary in 1992 or even at our 75th Anniversary twenty-five years from today.

I cannot close without developing one further idea. We are now in the prosecution of a war—the third war in which the United States has engaged in the life of the Association. In 1898 at the time of the Spanish-American War, I can find no evidence that psychologists contributed or were expected to contribute to the activities of the Government. I can find that Lightner Witmer volunteered, doffed his academic gown for a uniform and served in a cavalry unit in Puerto Rico. How different was the picture in 1917 when psychologists became so largely responsible for the problem of personnel selection in the Services but for little else. It is true that a few individuals, like Raymond Dodge, made valuable contributions to problems of material and the more advantageous use of matériel, but Dodge's was a relatively isolated contribution.

Today there has been no diminution of the importance of personnel selection—indeed this has become very greatly widened as the use of new materials has required the differential selection of specialized personnel, chosen because of

special abilities. Beyond this there have been much greater calls upon psychologists for the control of morale and public opinion, a development not possible at the time of the last World War when John Dewey read a paper on the 'Need of a Social Psychology.' But in this war psychologists have been asked to stay in their laboratories and speed the development of both fundamental and practical research on the many new problems which have grown out of the development of more and more complicated matériel. I suspect, when the history of the participation of American psychologists in either direct or indirect contribution to the present war effort is written, that even our membership will be surprised at the extent to which this has been employed. And too high praise cannot be given to those who have stayed on their academic jobs in order to continue the training of young psychologists and of those who have stayed on their applied jobs and so continue to work for the betterment of the civilian population in these trying times.

THE FOUNDING OF THE ASSOCIATION AND OF THE HOPKINS AND CLARK LABORATORIES

BY J. McKEEN CATTELL

Our place of birth was Clark University; the day, July 8, 1892; G. Stanley Hall was our Socrates and mid-wife. The original members numbered twenty-six. It may be worth while to call the roll. Frank Angell, then as now of Stanford University, a lost angel to us, for he is no longer among the fellowship of the saints. J. Mark Baldwin, then of the University of Toronto, whose contributions to psychology have been so notable, also one of the few whose name is absent from our rolls. William Lowe Bryan and Edmund C. Sanford, pioneers in experimental research, now fallen to "that bad eminence," where they bear the load Atlantean of our humbler fates. W. H. Burnham and Benjamin Ives Gilman, the one in a fundamental branch of education, the other in the fine arts, carrying on work somewhat apart from ours, but related to it. William Noyes, recently lost to us, and Edward Cowles, distinguished alienists. Cattell—*adsum*. John Dewey, John the Baptist of democracy, teacher of teachers, modern master of those who know. E. B. Delabarre, then as now at Brown University. W. O. Krohn, then at Clark; Herbert Nichols, then at Harvard; E. W. Scripture, then at Yale, no longer climbing the steep stairs and eating the bitter bread of academic life. James Hyslop, now following the mystic grail. J. G. Hume, of Toronto University, who saved us from a narrow nationalism and with E. H. Griffin, dean and scholar of the Johns Hopkins University, saved us from a narrow empiricism. Joseph Jastrow, our first secretary, who this afternoon is here to tell us of the work in which he himself has been such a great part. George H. Fullerton, my first professional colleague and comrade, acute thinker, one of our early presidents, now far away. Lightner Witmer, my first student and my successor

at Pennsylvania, where he leads in an important field of research. G. T. W. Patrick, of Iowa, and H. K. Wolfe, of Nebraska, influential as teachers and in their work in psychology and philosophy. Last and most honored of the living, G. Stanley Hall and George T. Ladd, our first two presidents, then seeming to be veteran leaders, but now having become my contemporaries, men to whom we owe so much in so many ways, founders not only of our association, but also of psychology.

To the twenty-six original members, five were added by election at the preliminary meeting. Death has taken from us T. Wesley Mills, of McGill, early worker in animal psychology, and H. T. Ormond, of Princeton, distinguished philosopher. Edward Pace seems to be sheltered from us by the wings of the church in the educational work in which he is engaged. Then there were two men elected not only into the association, but selected from the whole world, because they were those whom we wanted and needed, E. B. Titchener and Hugo Münsterberg.

I once wrote: "Harvard with James, Münsterberg, Royce . . . surpasses every other university in the world in its opportunity for psychological study and research." Now they all await us "where beyond these voices there is peace."—Hugo Münsterberg, always my friend since our student days in Leipzig, who with the hand of genius threw prodigally broadcast the diverse endowments of his great nation and his great race; William James, "the sweetest, wisest soul of all my days and lands"; there is none like him, none, nor will be; and Josiah Royce, his friend and ours, the well-beloved disciple, who leaves the world darker, now since his light is quenched.¹

The second laboratory of psychology² was organized by G. Stanley Hall at the Johns Hopkins University early in the year

¹ From the address of J. McK. Cattell on the twenty-fifth anniversary of the American Psychological Association, *Our psychological association and research*, *Science*, 1917, 45, 275f.

² The first formal research laboratory was Wundt's at Leipzig, founded in 1879. Hall's was the first formal laboratory in America, but there has been, of course, some controversy as to where to place James' room for demonstrational experiments at Harvard somewhere around 1876.—Ed.

1883. I was there before Hall, holding a fellowship in philosophy, this award for a thesis on Lotze having been made by the professor of Latin, who knew even less about philosophy than I did, or the fellowship would have been given to John Dewey. He was there as a student, as were also Joseph Jastrow and H. H. Donaldson. We helped Hall set up a modest laboratory in a private house adjacent to the center of the ugly little brick buildings and great men that formed the university. The small group of professors working there included Remsen, Rowland, Sylvester, Gildersleeve, Haupt, Adams, Brooks and Martin.

It is a curious fact that neither of the founders of our first two psychological laboratories was a laboratory worker. Hall's chair, like Wundt's, was not limited to psychology; he lectured on philosophy and he also conducted courses in pedagogy. The range of his interests was large, but it was the human aspects of life that he cared for rather than abstract quantitative measurements. Like James he was a man of literary genius swayed by the emotions, which are such a large part of life and as yet such a small part of our science. Minot, the distinguished Harvard embryologist, once said that he envied my occupation with a science concerned with human interests. My reply was that my experiments had as little to do with such things as his had with love and children. Hall wrote about children, adolescence and senescence, religion and sex, the drama of life. He and James were giants in the land, overtowering their descendants of a work-a-day world.

As Wundt established the *Philosophische Studien* to publish the work from his laboratory, and his own articles on psychology and philosophy, so Hall established the *American Journal of Psychology*. The early volumes give a survey of the work done in Baltimore, which was largely physiological and psychiatric. Hall was much interested in insanity and other pathological aspects of psychology and we used to go regularly to the Bayview Hospital for the Insane. These interests were maintained and in the last conversation I had with him in his lonely house at Worcester he wanted especially to know why orthodox American psychologists cared so little for Freud and

psychoanalysis. He showed me a mass of publications and notes that he had collected on the subject.

Hall was called upon to organize Clark University in 1888 and gathered there a group of outstanding scientific men, including Michelson, Webster, Bolza, Neff, Whitman, Mall, Donaldson, Lombard, McMurrich and Boas. The financial support of the university by Mr. Clark was less liberal than had been anticipated and Dr. Harper took over in a body a large part of these men for the faculty of the new University of Chicago. In his "Life and Confessions" Hall remarks: "I felt his act comparable to that of a housekeeper who would steal in at the back door to engage servants at a higher price." Sanford went with Hall from the Johns Hopkins to Clark and became director of the laboratory of psychology which was opened in 1889. The Johns Hopkins laboratory was closed and the apparatus dispersed until it was reestablished by Professor Baldwin and Professor Stratton. Hall and Clark University long maintained a dominant position in psychology and the psychological side of education. In his death there ends the romantic and heroic era of our science.³

³From Cattell's address at the opening of the Wittenberg laboratory, *Early psychological laboratories*, *Science*, 1928, 67, 546f.

AMERICAN PSYCHOLOGY IN THE '80's AND '90's

BY JOSEPH JASTROW

After fifty years memories acquire the haze of uncertainty. My recollections of the formation of the American Psychological Association must be subject to correction by whatever records may be available. My memory functions in terms of interest rather than of time and place.

In 1891 I was informed that a Division of Anthropology would be established under the direction of Professor F. W. Putnam of Harvard University at the World Columbian Exposition in Chicago—planned for 1892, but held in 1893. This Division provided for a Section of Psychology, which I was invited to arrange and direct, the first of its kind. With this interest, I visited the few universities that then had established psychological laboratories to invite them to send apparatus for a joint exhibit. As I recall it, Stanley Hall arranged the meeting to organize an American Psychological Association at Clark University at a time when I would be visiting the eastern universities for this purpose.

I had founded the laboratory of the University of Wisconsin in 1888, and in 1938 I delivered an address at Madison to celebrate its fiftieth anniversary. In the same year I attended, as one of a few surviving original members of the American Physiological Association, a meeting at Baltimore to mark the fiftieth anniversary of its foundation. That association formed the model for the A.P.A.

In 1892 a small group met in Dr. Hall's study at Clark University. He, as founder of the A.P.A., was elected its first President, and I became the first Secretary. The personnel of those attending this meeting for organization and the list of original members appears on another page of the present memorial.¹

¹ Cf. pp. 34-35; footnote p. 36.

With rare breadth of vision Stanley Hall projected the future of psychology as a profession. He recognized that the first step must be the admission of this newly emerging science to a place among the naturalistic sciences. Psychology he conceived as the scientific study of the mind in all its phases, from its lowly beginnings to its consummation in the complex activities of *homo sapiens*. It was all psycho-biology, yet it presented special relations to the social milieu in which the psyche found its completing expression. In this bearing there were two orders of sciences, those of mind and those of matter.

Requisite to the recognition of psychology as a science and as a profession was the machinery of a professional status. The first step had been taken by Stanley Hall in founding the *American Journal of Psychology* at Johns Hopkins University in 1886. The Baltimore laboratory was then the acknowledged leader in the training of psychologists, including those who, in view of the academic requirements of that period, would be called upon to teach one or another branch of philosophy. Equally imperative was the placing of psychologists in the universities, which up to that time had but partially and hesitantly recognized psychology as a department.

I was associated with Stanley Hall through the entire period of his Johns Hopkins activities; and I recall conferences with him in which these needs were stressed. I was, moreover, the first recipient of a Ph.D. specifically in psychology. Of those who preceded me, Dewey and Hall took their degrees in philosophy, and Cattell went to Leipzig for his Ph.D. Their memories are parallel with mine; and the same holds true of Bryan, who founded his department in the University of Indiana in the same year as mine at Wisconsin, although Cattell antedated both of us at Pennsylvania.

Psychology was peculiarly fortunate in gaining wide recognition both academically and in general esteem through its representation by the most brilliant professor of his day—William James. His two-volume *Principles of psychology* appeared in 1890, and established psychology as a study of important and compelling interest. Equally pioneering was the enthusiastic work of Ladd at Yale, who, though brought up in

a very different tradition, threw his energies into the scientific aspects of psychology and published the *Elements of physiological psychology* in 1887.

Through the enthusiasm of these and a few other leaders, the American Psychological Association came into being. Its growth was rapid, even phenomenal. The fact of its existence, however small the membership, placed psychology on the map. Psychologists were rapidly given standing in the academic curricula of all the leading universities.

I have traced elsewhere in terms of my participation in this half-century of professional activity, the development of my interests,² which, except for the diversity of individual preferences, is paralleled in the careers of others. The three volumes of biographies of psychologists, published by Clark University, records the continuous devotion to this science which inspired the founding of the present flourishing association.³

The small group of pioneers, however far-sighted and hopeful, could not envisage a membership of three thousand a half-century later; nor were their conceptions of the scope and applications of psychology at all adequate to what has become the record of its expansion. They builded better than they knew.

It is eminently appropriate that the fiftieth anniversary should commemorate the contributions of Stanley Hall, founder, and of William James, the centenary of whose birth falls in the same jubilee year. That the ceremonies of this commemoration should have been cancelled through the compelling occupations of war, emphasized grimly the significance of a proper understanding of the great psychological domain, for psychology has an authoritative voice in the maintenance of progressive human relations and in the interpretation of their psychopathic failure, a failure which precipitated the present world catastrophe.

² J. Jastrow (autobiography), *A history of psychology in autobiography*, 1930, I, pp. 135-162.

³ *A history of psychology in autobiography*, Worcester: Clark University Press, 1930, I; 1932, II; 1936, III.

WUNDT AND LEIPZIG IN THE ASSOCIATION'S EARLY DAYS

BY GEORGE M. STRATTON

The 'New Psychology' of the latter 1800's was revolutionary—meaning down from the top with the methods of philosophy, and up with those of experiment. Men took sides passionately against or for it. The movement swept into this country above all from Germany, from Weber and Fechner, but, still more, from Wundt, in whose laboratory, however—in what was humorously called its reliquary—we were shown some of Fechner's very apparatus. The fathers of the revolution thus were more than one.

By the time of our Association's founding, there were in Germany G. E. Müller, Stumpf, Ebbinghaus, and other distinguished experimenters in psychology. But American students went chiefly to Leipzig, there to become familiar with the new way—among them Cattell, Scripture, Frank Angell, H. K. Wolfe, Pace, Titchener, Witmer, Judd, and Tawney. Other Americans also studied there; but those named bear the mark of full recognition by Wundt, in that their work appears in the Laboratory's journal, *Philosophische Studien*, in the years before and soon after our Association was established. Cattell is the pioneer among them, with a paper in 1885 and a considerable number of his papers following. All the Americans who studied there ought to be named; they are an honorable company of those who gave bone and sinew to our psychology in those early years.

But the influence of Leipzig did not come only from those who studied there. Men who studied elsewhere in Europe or in America in those days—even under those who fought Wundt, tooth and nail—never escaped Wundt; he could not be left out of lectures, conversation, or the *Arbeit* of the young *Dozent*. It was a joy and a distinction to point out how wrong Leipzig

was. The *Studien* carried the laboratory's work to the world; Wundt's own papers were thus made widely known, as also were those of such men as Fechner, Höffding, Kraepelin, Meumann, Külpe, Kiesow and many more. These men represented one or another feature of the spirit of Wundt himself.

Men found a real teacher at Leipzig. In Wundt's lectures, his learning came forth in lively speech, the speaker's own controlled zeal for his subject never failing to stir his many student-hearers. At the Laboratory he daily visited each research in progress there, inquiring about it and answering inquiries from the research-man; and in his own consultation room he was ready for longer conferences with his men. And of a Sunday at his home he would have a goodly number of them to dinner and a lively after-discussion freely entered into by the company as a whole. In all this, he gave us much.

For he was a man of many and lively interests. He came to psychology through other fields, and never lost his sense of the bearing and importance of them and of other regions. An early work of his was on the mind of animals; he was always interested in the physiological context of psychic acts; he rendered distinguished service to social psychology; and his lectures included logic and jurisprudence. Along with the *psyche's* external and visible manifestations, he never excluded from psychology's field of research our inner experience, nor from its methods of research a critical self-observation. He recognized and emphasized the mind's activity of organizing into experience its sensory and other psychic materials. Wundt thus saw psychology as a science able to stand on its own feet, since it had special fields of its own and special methods of its own. The prestige of physics and physiology never carried him away, nor brought his psychology to conform wholly to them in field, method and goal.

American psychologists who received in those early days the broader currents from Leipzig were thus helped toward an immunity to certain recurrent disabilities. They distrusted any utter subjection of psychology as a whole to physiology, or to animal studies, or to psychopathology. The facts attested by these studies were welcomed, while a healthy resistance was

maintained against the psychological 'isms' often connected with the facts. Individuals did of course receive highly diverse currents of the Leipzig influence, but on the whole the American psychology of our Association's early days—and, I believe, in the years later—was helped to become, not only accustomed to experimental ways, but more thoroughly scientific generally, more confident of psychology's special tasks, and more fruitful in undertaking them.

TITCHENER AND JAMES

BY W. B. PILLSBURY

The reaction of Titchener to James and his work was a phenomenon of some interest to the early Cornell students and may be worth a note. They were two of the more prominent American psychologists in the 1890's. James was at his zenith in the early years of the decade and Titchener increased in recognition during that and the following decennium. To several of us in the early nineties it seemed that Titchener esteemed James rather less than was his due. This impression was based upon casual references rather than upon specific statements. One special bit of evidence was the choice of Sully's *Human mind* rather than of James' *Principles* as a text for the year's course in general psychology, 1893-94.

The occasion for the general coolness toward James may well have been his rather contemptuous references to Fechner and the psychophysical literature, and also to Wundt's system. Titchener was extremely loyal to his friends and to the tradition in which he had been reared.

I have sought for specific instances of Titchener's criticism of James, but find few signs of hostile reaction except to the theory of emotion. This first showed itself in Irons' articles on emotion in the *Philosophical Review*.¹ Irons was a student of philosophy, but was very close to Titchener and undoubtedly mirrored his opinion. Irons discussed emotion from the standpoint of classification and insisted that bodily responses were only incidental to emotions, not their real core. James' theory was treated with due respect and many of the criticisms made against it were similar to those made by Cannon much later, but of course without the experimental contribution that Cannon had at his command.

Titchener himself wrote more definitely on the James theory in 1914, after James' death. This article was not so much a criticism of the theory itself as of the credit that James

¹ David Irons, The nature of emotion, *Phil. Rev.*, 1897, 7, 476-486.

gave to his predecessors.³ In substance it quotes the initial statement of James in his 1884 article in *Mind* that he had derived his theory "from fragmentary introspective observations." Titchener then proceeded to enumerate, with quotations, eighteen authors before James who had mentioned bodily accompaniments as important to the emotions. The article apparently was written to intimate that James received more help than he credited from earlier writers, although it states only that James' wide reading must have acquainted him with the views of these men. Titchener said. "Even when he quotes Henle with the remark: 'Note how justly this expresses our theory'—even then he fails to quote Henle's definition of emotion, occurring on the very same page, as 'a presentation accompanied by sympathetically excited sensations, muscular movements, and secretions.'" Titchener explained the lack of acknowledgments as due to the fact that after all of his reading, "as the theory shot to a focus in James' thought, it carried with it a blaze of illumination; here, at long last, was something other than the classical descriptions and the endless classifications. . . . All in all, James' acceptance of the complete novelty of his theory must, I believe, be left to stand as something of a curiosity in the history of psychology." This conclusion he reached after mentioning that James gave complete recognition of Lange's independence in developing practically the same theory. Thus Titchener implied that James was less original than he and most psychologists had thought.

This criticism seems on the whole to have been rather captious. True, since Plato, references had been made to bodily accompaniments of emotion, but only with James do responses become the core of the emotion and not merely an accompaniment. This change was partly due to James' vividness of expression, but more to the increased emphasis that he put upon the bodily response. Whatever the reason, the scientific world attributes the theory to James and has given emotion a very different place ever since James wrote.

³ E. B. Titchener, An historical note on the James-Lange theory of emotion, *Amer. J. Psychol.*, 1914, 25, 427-447.

Aside from these references to the emotion, there is no indication in Titchener's published work that would belittle James. James is quoted more frequently by Titchener in his textbooks, aside from the Laboratory Manuals, than any other author but Wundt. Any indication of lack of esteem must depend upon personal student impression. So far as it existed it probably rested upon the feeling that James was outside the true experimental group and was not sympathetic with the Leipzig tradition.

EARLY DAYS OF COMPARATIVE PSYCHOLOGY

BY ROBERT M. YERKES

The memories I report are chiefly from my early days in Harvard. I think of them as footnotes to the history of psychology.

At the turn of the century, comparative psychology became experimental in America. The change was abrupt. When I first arrived at Harvard in the fall of 1897, Thorndike had just left for Columbia. I suspect it is fairer to assume that he was influenced by appointment to a fellowship rather than by preference for Cattell over James. Anyway, the scent of his experimental chicks still hung about the James cellar, and stories of his stirring personality were repeated in the halls of psychology. Things would have been much more exciting for us in Cambridge had he continued his professional training there.

From Columbia, which thereupon became a center of activity in comparative psychology, Thorndike published in quick succession his discussion-provoking experimental studies of 'intelligence' in cats, dogs, chicks, fishes, and monkeys. Then abruptly he turned from comparative to educational psychology; but already he had set a fashion in the study of animal behavior. Henceforth and for decades comparative psychology would be experimental instead of primarily naturalistic, reasonably controlled instead of anecdotal.

The scene of my first adventures in psychobiology, for I was then a pre-medical student, was the Agassiz Museum. There I was skillfully instructed and directed by Charles B. Davenport and George H. Parker, whose influence I highly prize. There followed years of experimental work, with various animals including man as subjects, in the Psychological Laboratory of old Dane Hall, under the influence of Münsterberg the generous, Robert MacDougall the patient, and Holt the partisan.

All the while I knew of lively interest in comparative psychology at Clark University, but I was given to understand that it was either indiscreet or bad form for a Harvard psychologist to try to cultivate friendly professional relations with G. Stanley Hall and his Clark associates. Years later I learned that this sensitiveness was due to a misunderstanding between Presidents Eliot and Hall. The latter had come to resent attempts to develop psychology as an experimental science in Harvard. This administrative misadventure created a situation which was most unprofitable for our local groups of psychologists and also for psychology. The observations I then made helped to fix in me the conviction that science should always be impersonal and objective. Still later I came to know Hall intimately, and also Sanford and Baird, and to profit greatly by professional contacts and friendship with them. One of the most stimulating evenings of my life I spent in Hall's famous 'Seminar' in his smoke-filled study discussing and defending the point-scale versus the Binet methods of gauging intelligence.

Even as Thorndike was converting the James cellar into a maze for chicks, significant discoveries were being made in comparative psychology at Clark, for there Hall supplied enthusiasm for attack on problems of psychogenesis and Sanford gave the workers careful guidance in methods of experimental inquiry. The two constituted a strong instructional team for such earnest pioneers in the study of animal behavior as Kline, Small, Triplett, Kinnaman, Porter, Conradi. What was then commonly spoken of as 'animal psychology,' presumably because it had not yet become known in the New World that man too is an animal, was more fittingly and accurately termed by President Hall 'genetic psychology.' The work at Clark, in the decade following 1895, notably advanced knowledge of sensory and perceptual aspects and relations of the behavior of birds, rodents, and primates.

At Harvard, after my professional training had been completed to the point of a Ph.D. in 1902, I continued, with the aid of graduate students, studies in phylogenetic psychology. Memories of those delightful days of research adventure come

as a flood. I must inhibit them lest I talk too long and tell too little. Among those whose faces come to mind as I recall our experiments with crayfish, salamanders, frogs, pigeons, chicks, mice, rats, cats, marmosets, are Huggins, Ayer, Utsurikawa, Bell, Haggerty, Cole, Rouse, Dodson, Breed, Berry, Waugh, Bingham, Coburn, Kellogg, Pressey, Burt.

Yet another contemporary center of interest in problems of animal behavior was the University of Chicago. There under the tutelage and inspiration of James R. Angell and Henry H. Donaldson, Watson made his studies of the relation of development of behavior to that of the brain in the white rat, which he finally published under the title *Animal education*. I was slightly acquainted with Watson in those our student days, and much more intimately during the period of his intensive research and methodological work at the Johns Hopkins University. That two objectivists who came to psychology by way of biology could differ so radically as Watson and I later did as to the logical and scientific merits of 'behaviorism' still seems to me quite unreasonable.

For their pioneer experimental contributions to genetic and comparative psychology in the decade 1896-1905, no other American centers of research rank in importance with Clark, Columbia, Harvard, and Chicago.

A PERSPECTIVE ON AMERICAN PSYCHOLOGY

BY WOLFGANG KÖHLER

I have been asked to say a few words about American psychology as seen *from the outside*. This is a great honor; but I wish the task were easier. For, actually I am inside. None the less I am expected to look and talk from the outside, which involves me in geometrical difficulties.

My acquaintance with your psychology dates from 1925, and with this year I begin my story. Without compliments, the advances which you have made since that time are almost unbelievable. In 1925 American psychology lived in an atmosphere of hesitation. Introspection appeared no longer as a fruitful enterprise. The program of Functionalism, though on the whole attractive, remained too general for concrete consequences to follow immediately. Even Behaviorism spent more time pointing at other peoples' faults than giving convincing examples of great research. For the most part young psychologists were fervent partisans of one school or another. But the schools had few particular problems in store.

At present no hesitation would be excusable in a young psychologist, and to my knowledge there is none. Well-paved roads lead in numerous directions, and to keen eyes a mere glimpse at the map will reveal where continuations or cross-connections ought to be attempted. Problems commonly arise in places in which the implications of established information tend to penetrate into a less known environment. In other words, problems issue from knowledge. In about twenty years so much information has somehow been gathered that now hosts of problems seem to announce themselves.

To be sure, knowledge has been and is being gained in separate rushes which aim at quite particular goals and, for the time being, at not much else. The rat's maze down to amazing details—muscle tensions, conditioning, eye movements, the auditory process, brain waves, frustration, neuroses in rats—they all have had their hour or have it now. But other sci-

ences have passed through the same stage, and invariably a more coherent picture has finally emerged. I am confident that soon psychology will follow suit. After all, there is Professor Hull who loves coherent pictures and paints them himself in the vivid hues of mathematical logic. Right now he paints *en miniature*. After a while he will probably tire of small things and paint *al fresco*. About his art you may say what you like. But in American psychology he was among the first who felt at all like painting.

Surely, more facts are being established in American psychology than anywhere else. In some quarters, it is true, I hear it said that you prefer certain facts to others. We cannot understand this criticism unless we consider the particular philosophy which lies behind your research. Chesterton tells us—and William James repeats it—that every adult's life expresses a philosophy which he may never formulate. Similarly, behind a given scientific endeavor there is as a rule a potent philosophy. American psychology is no exception. Ultimately your philosophy is one of sobriety and of caution, and to you the spirit of science is first of all a critical spirit. Many a psychologist whom the great crime has driven from Europe to your country will gratefully acknowledge that a dose of this philosophy of yours was just what he needed. As a corollary he will admit that, if from now on he writes clear sentences and sentences which somewhere come to an end, he is likely to think more clearly. When applied to scientific technique, your philosophy of caution makes for a strong interest in the conditions of experimental proof, an interest particularly in statistics. And to his embarrassment the psychologist from the other side will soon begin to learn that enthusiasm is no safe substitute for high reliability of differences. Occasionally, your preoccupation with the formal apparatus of your science may go a bit farther than seems good for this science itself. Let the last experimenter turn epistemologist, let all articles in the *PSYCHOLOGICAL REVIEW* be about definitions, and colleges and universities will be tempted to put you back into philosophy, a camp from which you have barely escaped.

Thus, virtue has its dangers. Malevolent people fairly wait for you to stumble. I have heard them gossiping when you had just gone to the soundproof room with a dog or to the maze room with some rats. Years ago, the gossips whisper, these psychologists decided in their caution to investigate simple things first. As a consequence they studied animals rather than man and, for practical reasons, preferably the rat. Now, to a very keen observer even the rat may reveal great secrets. But essential characteristics of man are barely discernible in the modest rodent; and what is barely discernible will easily be ignored. So it came about—I am still repeating what I have overheard—that a selection of subjects for reasons of method gradually turned into a selection of special material evidence. For no longer was the study of primitive facts a preliminary exercise. Rather a few concepts which would just do on the most primitive level were now assumed to cover *any* mental facts, and other terms met with distinct suspicion. In this fashion scientific bias grew from scientific caution.

I quote such remarks with perfect calm, because, even if their actual intent is hostile, on close inspection they prove to refer to one of the major victories of American psychology. For quite some time, I believe, there was a danger. Both this danger as such and its origin have been clearly recognized by the critics. But they have failed to realize that the danger has just been overcome—overcome by American psychology itself. Take the conditioned reflex, a notion about which scientific bias actually threatened to center. We have it from the best authorities that the essence of conditioning turns out to be the law of effect. This law, on the other hand, is rightly suspected of being a principle of motivation: When experience imbues objects with positive or negative significance, vectors naturally shift into corresponding directions. Not only Professor Tolman, I hope, will accept this formulation in which the sensible phase of behavior is recognized.

Thus it happens that just some critical remarks give me particular cause for expressing my admiration. I have the greatest confidence in the future of American psychology. Congratulations!

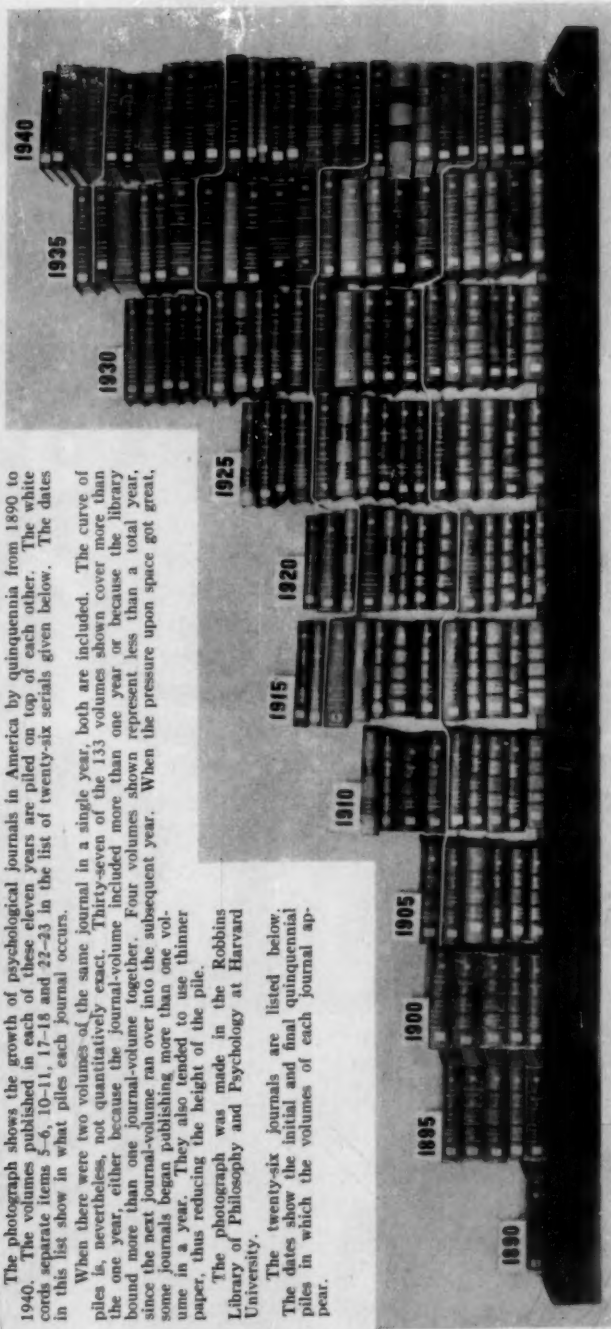
THE GROWTH OF PSYCHOLOGICAL JOURNALS IN AMERICA

The photograph shows the growth of psychological journals in America by quinquennia from 1890 to 1940. The volumes published in each of these eleven years are piled on top of each other. The white cords separate items 5-6, 10-11, 17-18 and 22-23 in the list of twenty-six serials given below. The dates in this list show in what piles each journal occurs.

When there were two volumes of the same journal in a single year, both are included. The curve of piles is, nevertheless, not quantitatively exact. Thirty-seven of the 133 volumes shown cover more than the one year, either because the journal-volume included more than one year or because the library bound more than one journal-volume together. Four volumes shown represent less than a total year, since the next journal-volume ran over into the subsequent year. When the pressure upon space got great, some journals began publishing more than one volume in a year. They also tended to use thinner paper, thus reducing the height of the pile.

The photograph was made in the Robbins Library of Philosophy and Psychology at Harvard University.

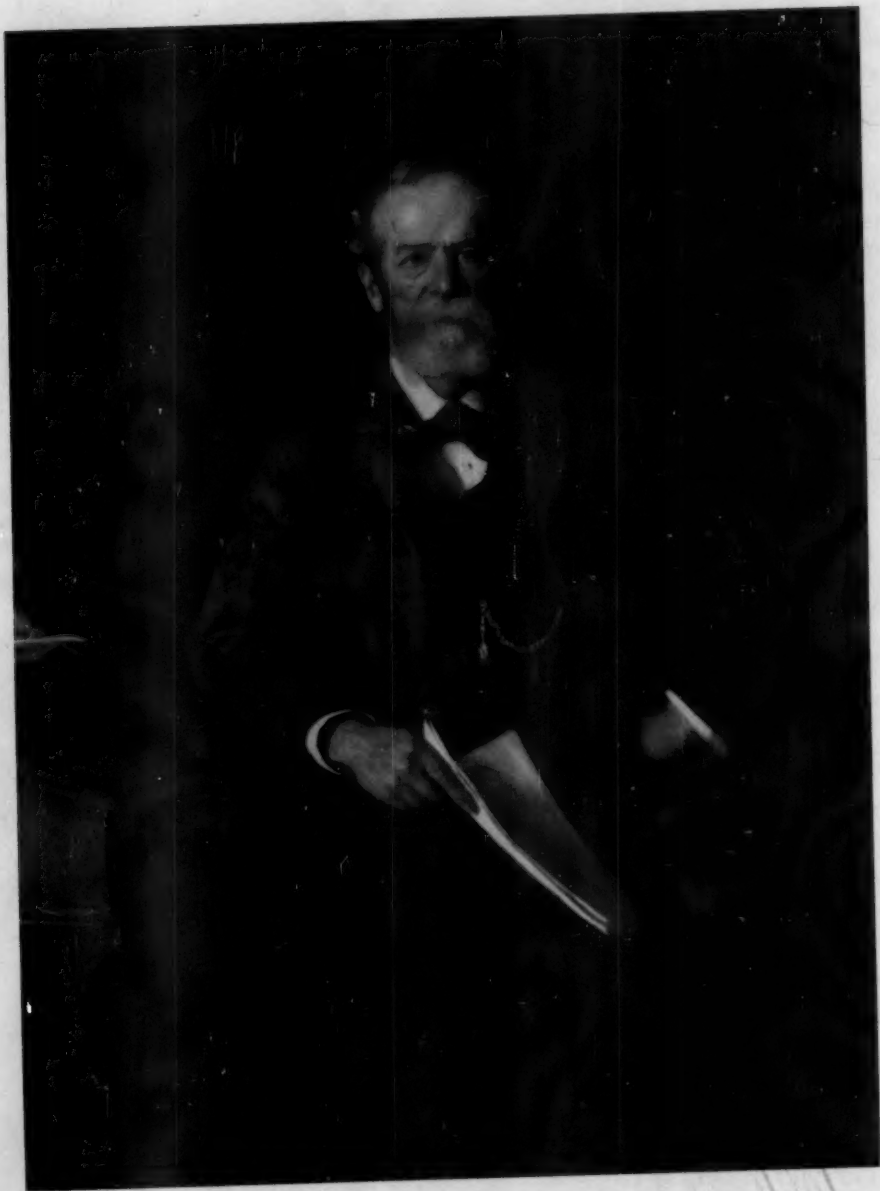
The twenty-six journals are listed below. The dates show the initial and final quinquennial piles in which the volumes of each journal appear.



1. American Journal of Psychology (1890-1940)
2. Journal of Genetic Psychology (1895-1940)
3. Psychological Review (1895-1940)
4. Psychological Index (1895-1935)
5. Psychological Monographs (1895-1940)
6. Psychological Bulletin (1905-1940)
7. Archives of Psychology (1910-1940)
8. Journal of Abnormal and Social Psychology (1910-1940)
9. Journal of Educational Psychology (1910-1940)
10. Psychoanalytic Review (1915-1940)
11. Behavior Monographs (1915-1920)
12. Journal of Animal Behavior (1915)
13. Journal of Experimental Psychology (1920-1940)
14. Journal of Applied Psychology (1920-1940)
15. Journal of Comparative Psychology (1925-1940)
16. Comparative Psychology Monographs (1925-1940)
17. Psychological Abstracts (1930-1940)
18. Journal of General Psychology (1930-1940)
19. Journal of Social Psychology (1930-1940)
20. Genetic Psychology Monographs (1930-1940)
21. Psychoanalytic Quarterly (1935-1940)
22. Character and Personality (1935-1940)
23. Journal of Psychology (1935-1940)
24. Psychometrika (1940)
25. Journal of Consulting Psychology (1940)
26. Psychological Record (1940).

Centenary of the Birth of William James

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Wm James

TOASTMASTER'S SPEECH

BY JAMES R. ANGELL

It was to have been my pleasant privilege to introduce the speakers taking part in the simple ceremony designed to celebrate the One Hundredth Anniversary of the Birth of William James. Unfortunately the exigencies of the war have compelled an abandonment of the occasion, but certain of the papers and reminiscences which were to have been presented are herewith published.

Fragmentary as they are, they nevertheless succeed remarkably well in bringing freshly to mind many of the most conspicuous personal characteristics of the great soul who was guide, counsellor and friend to so many of us, and they offer penetrating and sympathetic expositions of the strength and weakness of a number of his most significant contributions to the thought of his time.

E. L. Thorndike discusses 'James' Influence on the Psychology of Perception and Thought,' stating largely by quotations his doctrine of the 'fringes' of mental states, a teaching which deeply irritated the advocates of an older, more structuralistic conception of the mind by reason of its alleged metaphorical vagueness, but which together with his cerebralistic re-statement of the psychological doctrine of association left a deep mark on all subsequent treatment of thought processes, including conception, abstraction and rational thinking.

Closely articulated with the development of this doctrine as it relates to thought was his exploitation of habit with its neural basis and its consequences for overt action.

In connection with perception, Thorndike directs attention to James' celebrated doctrines of the 'specious present' as the elementary aspect of our sense of time, and the 'spatial quale' as the rudimentary factor in our apprehension of extension and mass. The anticipation in this doctrine of James

of certain of the characteristic features of the Gestalt school of psychology is appropriately emphasized. That James himself never more fully realized the relation of his teaching in this matter to the doctrines of Kant, whose philosophy he never tired of depreciating, has struck many of his readers with surprise. Certain portions of the 'Critique' perhaps warrant James' reference to the 'Kantian machine shop,' but the 'spatial quale' of James is first cousin, if not blood brother, to the Kantian *a priori* space in which objects appear to consciousness.

Thorndike makes a number of interesting references to the current scene in psychology fifty years after the publication of the *Principles*, from which have entirely disappeared some of the issues that most concerned James and his contemporaries. This circumstance has no bearing on the insight and power with which James dealt with his material, but simply reflects the shifting currents of scientific interest which in the nature of the case are never long stable and which have often gone off after strange gods from whose pursuit in due time they returned chastened and repentant.

G. W. Allport offers an illuminating paper on the 'Productive Paradoxes of William James,' in which he deals skillfully with a number of the teachings in the *Principles* which often drove his young disciples to despair and brought cynical joy to his critics. I have sometimes thought that James owed a part of his amazing capacity to generate intellectual excitement to these often flagrant contradictions in his pronouncements. Even when he was aware of them, as occasionally he apparently was not, his engaging and open acceptance of both horns of a dilemma endeared him to many a reader by reason of the obvious implication that here was an honest man not afraid to avow his inability convincingly to reconcile contradictions, each of which seemed to him true.

There are six riddles, Mr. Allport alleges, which sooner or later confront every psychologist. They deeply concerned James and in effect, with one possible exception, he offered inconsistent replies to each.

1. How is the mind related to the body?—a question to

which James responds at times in terms of neural automatism and again in terms of interactionism, one of which doctrines must be false if the other is true. Furthermore, he occasionally accepts parallelism.

2. Are the objective methods which science espouses suited to the subjective phenomena with which psychology must deal?

3. How account for such unity as the human personality discloses? This is the problem of the self and, exciting as is James' treatment of the subject, it has not been generally held a satisfactory and self-consistent explanation.

4. Why do we as scientists accept determinism only to act on the principle of indeterminism and the freedom of the will?

5. Why do the laws of association with their Aristotelian origin sometimes seem satisfactory, and more frequently unsatisfactory, to account for the organization of our higher mental processes?

6. Why is it so difficult to find as a result of our analyses of mental life any adequate explanation of the fact of individuality? This question is obviously a correlary of question 3.

The most fundamental aspects of these issues continue to appear in James' writings subsequent to the publication of the *Principles*. He was increasingly inclined to run over into metaphysics and epistemology, finally issuing in what he termed a 'radical empiricism' with considerable borrowings from pragmatism. But this is not the place to attempt to trace his later thought.

Reverting again to the *Principles*, Mr. Allport well says: "Presenting as it does the perennial problems of the human mind so sincerely, so modestly, so truly, the passing of years can do nothing but confer upon it the verdict of classic."

John Dewey offers a brief comment in which he classes the *Principles* with Locke's *Essay* and Hume's *Treatise*. Like those great works, it defies any narrow classification. "Like them it is addressed to the general public, and every page shows the concern of its author that the public understand the bearings of the topics with which the book dealt upon every-day attitudes and affairs."

Ralph Barton Perry, writing also briefly of 'James, the Psychologist as a Philosopher Sees Him,' observes that James was at one and the same time one of the first of the scientific psychologists and one of the last of the philosophical psychologists. He concludes his discerning and informing comment with the words: "James, who said of his *Principles* that its 'strictly positivistic point of view' was the only feature of it for which he claimed originality, and who through his pragmatism contributed to the method of positivism, would, if he were alive today, be in the forefront of the adversaries of positivism. The reason is very simple: He accepted any method, principle or technique for its positive fruits, but repudiated its prohibitions, negations and orthodoxies."

There follows a series of interesting reminiscences of former students written by E. B. Delabarre, E. D. Starbuck and R. P. Angier. They are perhaps chiefly valuable for the picture they offer of the effect upon intelligent young men of the vivid personality of James—his abounding friendliness, his insatiable interest in all kinds and conditions of persons and things, his modesty, his complete intellectual honesty and his indescribable charm. When traits such as these are combined, as they were in James, with a superb mind and a command of a compelling literary style, it is easy to understand why his figure stands out not only in the history of the psychology and philosophy of our time, but in the list of the great citizens of the world of thought and letters.

JAMES' INFLUENCE ON THE PSYCHOLOGY OF PERCEPTION AND THOUGHT

BY E. L. THORNDIKE

James taught psychology from 1875 to 1892, when he secured the appointment of Münsterberg. He also taught a course or two for some years thereafter, but Woodworth and I, who were students at Harvard from '95 to '97 and would gladly have taken any course in psychology offered by him, found few to take. Yerkes never had a course with James. Almost no doctoral dissertations in psychology were taken under James. He influenced psychologists through books rather than disciples. 'Book' would perhaps be truer than 'books,' for those that followed the *Principles of psychology*, published in 1890, were either abbreviations of it or books on philosophy, with one exception, *The varieties of religious experience*, published in 1902. Though treasured by all serious students of religion, this dealt with narrow problems of a specialized field. The influence of James on psychology means essentially the influence of the *Principles of psychology*.

When I accepted the commission to make this address it was my intention to do no more than read you a series of quotations from this book and let each of you decide in the case of each item whether it is a pillar of your faith and a part of your psychology, or a doctrine that you disbelieve, or a matter that now seems of little or no consequence. For various reasons it was decided that I should not do just that, but I shall include enough of what James said to give you a half-dozen such opportunities, and atone for weakness or error in what I say.

You all know that this was a great book. Perhaps no one of you would dispute Spearman's statement of five years ago that it is 'the most successful book ever written on psychology.'¹ If you have read it and compared it with the

¹ C. Spearman, *Psychology down the ages*, London: MacMillan, 1937, II, p. 3.

books written near 1890 by another great man, Wundt, and by lesser men such as Sully and Stout in England and Ladd and Baldwin in America, I have little or nothing to teach you about why it was great. But it is probable that, in your preoccupations with your several specialties, few of you under age fifty have read the master books of James and Wundt, and only a very few, patriarchs or historians, have read their lesser predecessors and contemporaries.

Let us then inspect some of the contributions of the *Principles* to the psychology of its day and of our day.

James' most important discovery in psychology was the existence and importance of what he called the 'fringes' of mental states. I will use his own words to describe them. Of the stream of a man's inner life he says:

Like a bird's life, it seems to be made of an alternation of flights and perchings. . . . The resting-places are usually occupied by sensorial imaginations of some sort . . . ; the places of flight are filled with thoughts of relations.

Let us call the resting-places the 'substantive parts,' and the places of flight the 'transitive parts,' of the stream of thought.

There is not a conjunction or a preposition, and hardly an adverbial phrase, syntactic form, or inflection of voice, in human speech, that does not express some shading or other of relation which we at some moment actually feel to exist between the larger objects of our thought.

We ought to say a feeling of *and*, a feeling of *if*, a feeling of *but*, and a feeling of *by*, quite as readily as we say a feeling of *blue* or a feeling of *cold*.

So much for the transitive states. But there are other unnamed states or qualities of states that are just as important and just as cognitive as they²

I regret that time is lacking to quote James' account of feelings of tendency, of expectation, and of intent, and other samples of the 'fringes' of mental states.

Let us continue with the contrast between the orthodox psychology of the nineties and the Jamesian. I quote again:

² W. James, *Principles of psychology*, New York: Henry Holt & Co., 1890, I, pp. 243-250 passim.

. . . the definite images of traditional psychology form but the very smallest part of our minds as they actually live. The traditional psychology talks like one who should say a river consists of nothing but pailsful, spoonsful, quartpotsful, barrelsful, and other moulded forms of water. Even were the pails and pots all actually standing in the stream, still between them the free water would continue to flow. . . . Every definite image in the mind is steeped and dyed in the free water that flows round it. With it grows the sense of its relations, near and remote, the dying echo of whence it came to us, the dawning sense of whither it is to lead.

Between all . . . substantive elements there is 'transitive' consciousness, and the words and images are 'fringed,' . . .³

This discovery has prevented wise and well-informed psychologists from repeating the inadequate and false descriptions and explanations of conception, abstraction, and relational thinking, which had been orthodox doctrine. It still can be fruitful for all those who wish to know not only what men and animals can achieve intellectually, but also what stuff in their consciousness goes with the achievement. Even in the lowly kitten or rat there are facts reasonably called readiesses, expectations, attitudes pro, attitudes con, et cetera; and these may be represented in their inner conscious lives by conscious 'fringes' to their percepts and impulses and to such scanty imagery as they have.

The *Principles* looked to biology rather than to theology or metaphysics for explanations of mental facts. These streams of consciousness or mental states, or, as James preferred to call them, thoughts and feelings, which constituted the inner lives of human beings, were intimately associated with and, in the ordinary scientific sense of the word, caused by the currents and vibrations (James used both terms) of the nerve cells of human brains. At least 999 parts out of a thousand of them were, and probably 999,999 parts out of a million.

The rare reversals were, in James' opinion, cases where the soul or self or regnant over-all mental control of a person switched a current or changed a vibration, to favor some wants of the person. These rare cases were important for life and

³ *Principles*, pp. 255, 271.

for James' pragmatic philosophy, somewhat as the 'Yeses' and 'Noes' of the top executive of a great corporation or government are important because they determine its policy. They seemed to James useful to account for certain phenomena in intellectual and moral choices. But the great bulk of a man's mental life was the product of his brain. Combining impressions from the senses, preserving the results of experience in habits and memories, evoking them in images, discriminating, comparing, abstracting, fabricating general notions and abstract ideas, judging, reasoning, and deciding—all these were not faculties of a man's soul but functions of his brain. This was news, and good news, to young students of psychology in the nineties and attracted to the further study of psychology some who would have avoided it like the plague if they had been introduced to it by Porter or McCosh or even by Ladd or Baldwin.

James tried to show, moreover, what the behavior in the brain might be for each important case. For example, habits were accounted for by smoothings or deepenings of paths in the brain. The notion of a dog in general as contrasted with that of a particular pet he accounted for by the semi-arousal of brain processes connected with many experiences of dogs large and small, black, white, and brown, with long legs and short. The analysis of an element out of a complex by varying its concomitants could perhaps be due to the neutralizing of contradictory brain processes.

Why the repetition of the character in combination with different wholes will cause it thus to break up its adhesion with any of them, and roll out, as it were, alone upon the table of consciousness, is a little of a mystery. One might suppose the nerve-process of the various concomitants to neutralize or inhibit each other more or less and to leave the process of the common term alone distinctly active.⁴

The soul certainly retreated from psychology to theology, near the turn of the century, partly because of James' evidence denying its claims, and partly because the experimentalists treated it with neglect, which is a very potent form of denial.

⁴ *Principles*, I, p. 507.

The detailed hypotheses of brain action set forth by James have had little influence. Some of them may have predisposed some of us to a provisional and somewhat dubious acquiescence, and to a general readiness to accept the biologist's view of the neurones as the body's connection system, and to a hope that the locations and patterns of neural conductions would explain much if and when we discovered these locations and patterns. But research in physiological psychology has been unmoved by James' hypotheses.

Since I am not dealing with James' psychology of action and feeling, I need not discuss his neurological 'explanation' of "why collateral innervation should establish itself after loss of brain tissue, and why incoming stimuli should find their way out again, after an interval, by their former paths".⁵ Nor need I discuss his physiology of the emotions.

James made wide but also prudent use of two facts which for convenience we may call *habit* and *the action of parts or elements*. With these relatively simple facts (or principles or laws or mechanisms, as you prefer), he remodeled British Associationism into a more tenable and useful account of perception, abstraction, conception, and reasoning, that is to say, of intellectual behavior. Of his many uses of the fact that conduction in the brain is due to its inherited structure plus its previous conductions, I will quote none.

The principle that within any mental state or brain state some part or element or feature can be predominant in determining further thought or action was used by James especially to explain association by similarity and the analytic side of reasoning:

Whereas the merely empirical thinker stares at a fact in its entirety, and remains helpless, or gets 'stuck,' if it suggests no concomitant or similar, the reasoner breaks it up and notices some one of its separate attributes. . . . This attribute has properties or consequences which the fact until then was not known to have, but which, now that it is noticed to contain the attribute, it must have . . . reasoning may then be very well defined as the substitution of parts and their implications or consequences for wholes.⁶

⁵ *Principles*, II, p. 591 f.

⁶ *Principles*, II, p. 330.

James' revision of British Associationism was somewhat neglected for one generation by psychologists trained by Wundt or pupils of Wundt, and for the next generation by those devoted to the Gestalt school. It was also largely neglected by psychiatrists, who indeed studied little psychology, English, German, or American, until the exciting doctrines of Freud got under way. It had a great and on the whole a beneficent influence upon education, where it replaced a pretentious and verbose faculty psychology or a narrow and pedantic Herbartianism.

James led the way by taking pains, in chapter after chapter of the *Principles*, to note applications to learning and conduct, and by writing the *Talks to teachers*. Others maintained and extended his doctrines alongside the deliverances of Stanley Hall's pupils in child psychology. Both were eventually replaced in some measure, and greatly extended, by observational and experimental studies of thinking and learning as educational psychology became a recognized part of science. But much of the Jamesian associationism is still alive.

Some sections of the *Principles* concern matters which most of us would assign to the theory of knowledge. Others concern matters which, though factual, are not now much considered by psychologists. How many of you, for example, know what James' doctrines of the 'specious present' and of the 'spatial quale' were? Yet these words suggest problems which seemed of vital importance fifty years ago and which James labored at with acute observation and reflection. He concluded that associationists overplayed their hands when they tried to make the sense of time out of anything but a feeling of time or the awareness of space out of anything but a feeling of space. Kantians, on the other hand, according to James, called in a transcendent *deus ex machina* when it was no more needed than it was to account for any other sort of sensation.

What is the *original* of our experience of pastness, from whence we get the meaning of the term?

A simple sensation, as we shall hereafter see, is an abstraction, and all our concrete states of mind are representations of objects with some amount of complexity. Part of the complexity is the echo of the objects just past, and, . . . the foretaste of those just to arrive.

Let any one try, I will not say to arrest, but to notice or attend to, the *present* moment of time. One of the most baffling experiences occurs. Where is it, this present? It has melted in our grasp, fled ere we could touch it, gone in the instant of becoming. . . . it is only as entering into the living and moving organization of a much wider tract of time that the strict present is apprehended at all. The only fact of our immediate experience is what Mr. E. R. Clay has well called 'the *specious* present.'

. . . the practically cognized present is no knife-edge, but a saddle-back, with a certain breadth of its own on which we sit perched, The unit of composition of our perception of time is a *duration*, with a bow and a stern, as it were. . . . It is only as parts of this *duration-block* that the relation of *succession* of one end to the other is perceived. We do not first feel one end and then feel the other after it, and from the perception of the succession infer an interval of time between, but we seem to feel the interval of time as a whole with its two ends embedded in it.⁷

Chapter XX of the *Principles*, an abridgment of which appeared in the *Journal of Speculative Philosophy* under the title 'The spatial quale,' begins as follows:

In the sensations of hearing, touch, sight, and pain we are accustomed to distinguish from among the other elements the element of voluminousness. We call the reverberations of a thunderstorm more voluminous than the squeaking of a slate-pencil; . . . a little neuralgic pain, fine as a cobweb, in the face, seems less extensive than the heavy soreness of a boil or the vast discomfort of a colic. . . .

Now my first thesis is that this element, discernible in each and every sensation, though more developed in some than in others, is the original sensation of space. . . . 'Extensivity,' as Mr. James Ward calls it, on this view, becomes an element in each sensation just as intensity is.

If I had the time I could quote passages which presented fifty years ago facts which some of you have assumed originated in the Gestalt school. The recital would begin with:

⁷ *Principles*, I, pp. 605-610, passim.

. . . all brain processes are such as give rise to what we may call FIGURED consciousness.⁸

What appeals to our attention far more than the absolute quality or quantity of a given sensation is its *ratio* to whatever other sensations we may have at the same time.⁹

The consciousness, which is itself an integral thing not made of parts, 'corresponds' to the entire activity of the brain, whatever that may be, at the moment.¹⁰

A half hour is not enough to show psychology's debt to James in matters concerning perception and thought, but I hope that the rising generation may have a somewhat truer and more vivid sense of it than before. Our honored elders, Cattell, Dewey, and Jastrow, have acknowledged their debt to James. And most of the generation in between would testify to the beneficent influence of the *Principles* upon their thinking.

Adapting words used by James for another purpose we may say: "What generous divination, and that superiority in virtue which was thought by Cicero to give a man the best insight into nature" could do, in the years from 1875 to 1890 William James did in his *Principles of psychology*.

⁸ *Principles*, II, p. 82.

⁹ *Principles*, I, pp. 231, 232.

¹⁰ *Principles*, I, p. 177.

THE PRODUCTIVE PARADOXES OF WILLIAM JAMES

BY GORDON W. ALLPORT

It takes the whole of us to spell the meaning out completely. W. J.

A few years ago, on a hot afternoon in August, a foreign student walked slowly up the path to Emerson Hall, and spoke to a man on the doorstep. "I have just arrived from Syria," he said, "and wish to study where William James taught. Could you tell me, please, if this is the place? And could you direct me to his grave, so that I may visit it?" I report this incident while we are celebrating the one-hundredth anniversary of William James's birth because it seems to me to memorialize in a simple way the respect and the affection in which inquiring minds, the world over, still hold his spirit and his genius.

Yet, whatever tributes we pay to the radiance of his personality and to his accomplishments, it is none the less true that James, like other historic figures of equal stature, grows legendary in the course of time. Few psychologists under the age of forty-five, I venture to say, have read the *Principles* from cover to cover, or the *Varieties*, or even *Talks to teachers*. Still fewer are conversant with his philosophical writings. All of them, to be sure, can quote from James—who cannot?—but not many have voyaged with him into the obscurer reaches of his thought as attentively as he himself once voyaged with Louis Aggasiz to the dark country of the Amazon.

One reason, no doubt, is that two shattering world wars divide the epoch of James from the present. It is more than one can do to keep pace with modern social and intellectual catastrophe, let alone to bind the insights of half a century ago with those of the precarious present.

But there is, I think, a more specific reason why modern psychologists are inclined to do obeisance to James's name while avoiding the details of his thought. The reason is that

today's reader is frankly bewildered. At first, led along by lucidity and inspiration, he finds himself assenting eagerly to a great many discrete observations, as arresting in their brilliance as anything he ever encountered. But soon he comes upon propositions that contradict one another and do violence to his sense of syllogism. The further he reads, the more the contradictions pile up, and his discomfort becomes acute. In reading the *Principles* he probably feels as Bertrand Russell felt in reading *Pragmatism*—as if he were taking a bath in water which heated up so imperceptibly that he didn't know when to scream.

After wrestling with the sporadic and episodic character of James's thought, Santayana concluded that James merely 'made raids' upon philosophy. There are many who would also say that he made only raids upon psychology, and would add, that, insofar as he applied scientific standards at all, most of them are now to be regarded as primitive and as dated. At the same time, the *Principles*, published fifty-two years ago, remains far more penetrating about human behavior and seems more alive than most textbooks published within the past year. Presenting, as it does, the perennial problems of the human mind so sincerely, so modestly, so truly, the passing of years can do nothing but confer upon it the verdict of classic.

But it is not with James's insight, nor with his inspiring personal qualities that we are here concerned. It is rather with the basic contradictions that mark his psychological thought.

THE PERSISTENT RIDDLES OF PSYCHOLOGY

In the course of his professional life, every psychologist encounters a sphinx who asks of him six riddles:

(1) How is the mind you study related to its body? The *psychophysical* riddle.

(2) Are the objective methods you by preference employ suited to the subjective facts that are your ultimate data? The riddle of *positivism*.

(3) How do you account for such integration and unity as the human personality manifests? The riddle of the *Self*.

(4) Why is it that, in spite of your postulate of strict determinism, you half-believe, and nearly always act on an hypothesis of indeterminism? The riddle of *free will*.

(5) Why is it that the old laws of mental connection, going back to Aristotle, seem sometimes adequate and sometimes inadequate in accounting for the organization of higher mental processes? The riddle of *association*.

(6) Why is it that, after making your analyses of mental states, you are unable to find in the sum-total of them any close approximation of the way mental life is uniquely and individually presented in nature? The riddle of *individuality*.

Of every passing psychologist these questions are asked. Many refuse to answer, muttering impatiently, but not convincingly, that important questions are merely semantic. It is true that some psychologists linger long over one or another of these puzzles, but William James lingered over all six. He agonized over them; he proposed a solution to each, and more often than not he landed squarely in the middle of a paradox.

THE RELATION BETWEEN MIND AND BODY

In his chapter on The Automaton Theory he first made a clear and persuasive case for radical reflexology, that is to say, for holding to the physiological level of discourse consistently, and for regarding consciousness after the manner of Huxley, merely as the steam whistle which accompanies the work of the locomotive engine, without ability to exert any causal influence upon the machinery itself. James pointed to the æsthetic and scientific superiority of his epiphenomenal position. But in the second half of the same chapter he repudiated the automatism view, regarding it as an "unwarrantable impertinence in the present state of psychology" (10, I, p. 138). The automaton analogy, he maintained, is too simple, too one-sided. Particularly is it unable to answer the obvious question: why, if consciousness doesn't count, are we conscious at all? Is not consciousness capable of "bringing a more or less constant pressure to bear in favor of those of its performances which make for the most permanent interests of the brain's owner"? (10, I, p. 140). Is it not capable of selectively re-

inforcing one of the various possible tendencies to action? Does it not make for survival, and is it not at any given moment "a fighter for ends"? (10, I, p. 141).

He was particularly impressed by the fact that consciousness is intense only when nerve-processes are hesitating. "Where indecision is great, as before a dangerous leap, consciousness is agonizingly intense" (10, I, p. 142). Why? Is it, as the epiphenomenalists say, merely because friction in antagonistic nerve pathways engenders much heat? What a worthless invention of nature that would be, unless the consciousness resulting from such conflict has at least a limited causal efficacy of reinforcing the favorable possibilities and repressing the unfavorable or indifferent ones. Now, to claim that consciousness may at times enter into the causal chain is to advocate the interactionistic view of the body-mind relation, a classic expression of which occurs in the passage where he insists that an examination of the properties of consciousness shows that they are "exactly such as we might expect in an organ added for the sake of steering a nervous system grown too complex to regulate itself" (10, I, p. 144).

But he did not follow up this brief and brilliant defense of interactionism with consistent application. Only a few aspects of his psychologizing demand this dualism, notably his doctrine of the Fiat, of a subliminal cosmic consciousness, his defense of psychic research and his numerous moral exhortations to better living. On the contrary, in most areas of his psychological thinking, James accepted the implications of physiological determinism scrupulously. So much so that Durkheim actually berated him for being a materialist, drawing attention to James's insistence that retention is not a fact of a mental order at all, but purely physiological, and to his belief that mental images are 'exactly matched' to brain states (5). Perry thinks of James as a consistent psychophysical parallelist:

He recognized an obligation to find a physiological correlate for every state or function of mind, and to confine psychological speculation within the bounds of physiological probability. Nothing is more striking than the fidelity with which James carried out this

method, in his treatment of association, habit, emotion, will, perception, and other topics. Furthermore, he used physiological hypotheses to extend and supplement, as well as to explain, the processes of consciousness (20, II, p. 76).

Perry, I think, exaggerates the fidelity with which James kept to the physiological anchorage in his theories, even though he did defend the parallelistic position (only forty pages beyond his championship of interactionism!). By keeping to parallelism, he said, "our psychology will remain positivistic and non-metaphysical" (10, I, p. 182). Yet sensing his own predicament he argued that this shall be merely a 'provisional halting place,' and that some day things must be 'more thoroughly thought out.' In another connection, weary of body-mind disputes, he impatiently exclaimed, "such arguments as these can eat each other up to all eternity" (10, I, p. 134).

And so we find James expounding various alternative solutions to the body-mind problem. Carried away by his own persuasiveness he adopted these solutions seriatim, unabashed by his own inconsistency. By turns he was parallelistic, epiphenomenalistic, and interactionistic. William McDougall, attempting to gain support in James's writing for his own interactionist position, found what he was looking for but found also flat contradictions. "Could anything," asked the aggrieved McDougall, "be more perverse!" (17, p. 362).

POSITIVISM AND PHENOMENOLOGY

John Dewey has argued that the natural trend of James's thought, and the bulk of his writings, squares directly with a biological and situational behaviorism (4). And Edman has said James gave 'the original impulsion' toward treating of existences in terms of movement and of knowledge in terms of operation (6). On the other hand, Boring insists that James was a phenomenologist (2). Dewey and Edman see James in the camp of modern objectivism; Boring billets him with the subjectivists. The truth is that James moved from tent to tent, as if driven now by his own tough-mindedness, and now by his own tender-mindedness. In his positivistic moods,

however—and this is a point of some importance—it was Mach rather than Bridgman whom he most closely resembled.

He admired the tireless grubbing of the German experimentalists, and tried in his way to imitate it. Rigor in method was his ideal. Over and over in his letters we find it expressed:

The more we can steer clear of theories at first, the better. . . . 'Facts' are what are wanted (9, I, p. 250).

I want now if possible to write something serious, systematic and syllogistic; I've had enough of the squashy popular-lecture style. . . . (20, II, p. 338).

I actually *hate* lecturing; and this job [the Hibbert Lectures, *A Pluralistic Universe*] condemns me to publish another book written in picturesque and popular style when I was settling down to something whose manner would be more *strengwissenschaftlich*, i.e., concise, dry, and impersonal (20, II, p. 583).

If his tastes were rigorously tough-minded on Tuesdays, Thursdays and Saturdays, pointing as Dewey and Edman insist in the direction of behaviorism and positivism, they seem more exuberantly natural on Mondays, Wednesdays, Fridays, and Sundays when he wrote his phenomenological passages.

Many persons nowadays seem to think that any conclusion must be very scientific if the arguments in favor of it are all derived from twitching of frogs' legs—especially if the frogs are decapitated—and that, on the other hand, any doctrine chiefly vouched for by the feelings of human beings—with heads on their shoulders—must be benighted and superstitious (20, II, p. 30).

The most interesting and valuable things about a man are his ideals and overbeliefs (12, p. xiii).

Individuality is founded in feeling; and the recesses of feeling, the darker, blinder strata of character, are the only places in the world in which we catch real fact in the making, and directly perceive how events happen, and how work is actually done (11, p. 501-502).

As soon as we deal with private and personal phenomena as such, we deal with realities in the completest sense of the term (11, p. 598).

As the years went by he shifted his emphasis more and more from the positivistic empiricism to which he himself had

given such impulse, and defended that special form of subjectivism which he chose to call 'radical empiricism' (15).¹

Radical empiricism has never become integrated with modern psychology. It might have served as the foundations for an American school of phenomenology, but it did not. Instead, the examination of the intent and constitution of experience was left largely to Husserl and his associates in Germany, and their work has only recently been taken up in this country as a foundation for a somewhat synthetic psychophenomenology.²

What is radical empiricism, and what are its neglected implications for psychology? It is a tentative theory of knowledge, admitting all experiences of fact as hypotheses to be verified in the course of future experience. Immediacy of understanding is given a more sympathetic hearing than is customary among present-day psychologists. The opposition between James's phenomenology and modern operationism is clearly stated by Perry:

He [James] differs from the positivists in his insistence that acquaintance is also knowledge. He further insists that both conceptual and operational knowledge are dependent on knowledge by acquaintance. They are the best possible knowledge in the majority of cases, but they are, nonetheless, a second best. Concepts and operations are substitutes for immediacy, but they are qualified substitutes in so far as they are expectations of immediacy. Concepts are abstracted from experience; or, if they are pure conventions, they derive their meaning from their power, through association and agreement, to suggest experience. An operation may be substituted for any given object, when it would be appropriate to the presence of that object. Concepts and operations may be provisionally verified in terms of other concepts and operations; but their ultimate verification occurs only when an experience is as was expected, or when *what* was conceived or assumed in practice is realized in immediacy (19, p. 68).

¹ It seems probable that this shift was due in part to his wrestling at the turn of the century with autobiographical case studies in the course of preparing the *Varieties*. He grew to respect these documents which set forth the intense personal experiences of 'the most religious people in their most religious moments.' Such experiences, though virtually inaccessible to outsiders, were, he felt, of undoubted authenticity and should be admitted as belonging to the very core of psychological subject-matter.

² The journal, *Philosophy and Phenomenological Research*, was founded in 1940.

For all the impetus James gave to biological and situational behaviorism, toward the end of his life he reversed his emphasis. Instead of holding, as behaviorism does, that conscious report is valid if it is equated with objectifiable and operationally communicated propositions, he would maintain that an experiment or an operation is valid if it confirms the expectations of direct experience. Immediacy is the essence of psychological truth.

THE SELF

In the 1880's, while James was writing the *Principles*, discussions of the unity of mental life were prevalent. James himself felt that the British associationists with their mind-stuff theory had left out the conditions of coherence in the individual mental life. Somewhere, he contended, the effects of the manifold brain processes must combine to account for the spearhead of purposes that characterize the living being. While tussling with this problem, he spoke impatiently to himself, asking "Why on earth doesn't the poor man say the Soul and have done with it?" (10, I, p. 180). And so he boldly said Soul, and (for the moment) *meant* Soul; but he didn't have done with it.

This postulate which seemed the most satisfactory hypothesis in Chapter VI of the *Principles* becomes a 'complete superfluity' in Chapter X. In fact he argued, throughout most of the book, that a sufficient guarantee of such unity and integration as a given mind possesses is to be found in the overlapping of memories, the cumulative character of thought, each successive moment of which appropriates the thought of preceding moments, and in the interpenetration of states of feeling and cognition.

The famous chapter on The Consciousness of Self starts off with a dazzling descriptive account of the empirical aspects of man's material and social selves. Thereafter it settles down to the dreary grind of considering arguments for and against a Pure Ego (or Knower). Deciding against a self-active agent of this order, he concluded that

the passing thought itself is the only *verifiable* thinker, and its empirical connection with brain-process is the ultimate known law (10, I, p. 346).

Yet there is another strain in his exposition. There are arguments that, taken by themselves, might lead to a thoroughgoing personalistic or self-psychology. Calkins actually dated the origin of her self-psychology from James's enthusiastic elevation of the personal consciousness to the supreme place in psychology (3, p. 31). And the following passage states the case as strongly as any personalist could desire:

It seems as if the elementary psychic fact were not *thought* or *this thought* or *that thought*, but *my thought*, every thought being *owned*. Neither contemporaneity, nor proximity in space, nor similarity of quality and content are able to fuse thoughts together which are sundered by this barrier of belonging to different personal minds. The breaches between such thoughts are the most absolute breaches in nature. . . . On these terms the personal self rather than the thought might be treated as the immediate datum in psychology. . . . No psychology, at any rate, can question the *existence* of personal selves. The worst a psychology can do is so to interpret the nature of these selves as to rob them of their worth (10, I, p. 226).

One might make much of James's prophetic remark that psychology at its worst interprets the nature of these selves in such a way as to rob them of their worth. It would be easy to argue that psychology, especially since the time of James, has done its worst. But, ironically enough, James himself is partly to blame. In the chapter on Self-consciousness we encounter a completely sensationalistic reduction of the Self from the introspective point of view:

. . . the 'Self of selves,' when carefully examined, is found to consist mainly of the collection of these peculiar motions in the head or between the head and throat. . . . I feel quite sure that these cephalic motions are the portions of my innermost activity of which I am most distinctly aware . . . our entire feeling of spiritual activity, or what commonly passes by that name, is really a feeling of bodily activities whose exact nature is by most men overlooked (10, I, pp. 301f.).

Although James used both introspective evidence and reductionist reasoning (at times) to get rid of the Self con-

ceived as Knower and as Subject, he never argued directly against the Self as a teleological unity, as the center of striving, as the dynamic aspect of personality. Indeed there are numerous references to the fact that the whole import of higher mental processes is to advance private purposes. Every moment of consciousness is a 'fighter for ends' (10, I, p. 141). It is *interest* that guides attention, *purposes* that determine meanings, and, above all, *belief* that makes life the energetic thing that it is. And yet, to the very end a teleological writer, he seems bent perversely enough on exhibiting purposive striving as brain pulsations, and belief (in part at least) as a cluster of sensations.

In passing one must remark the fact that the famous chapter on Habit is not consistent with James's concept of a purposive Self endowed with a selective consciousness. According to the doctrine of habit, any deed, however casually performed, is counted and stored up in the nerve cells to be used against us on Judgment Day. But this mechanistic view is contradicted in the chapter on Attention, where we read that

an object once attended to will remain in the memory whilst one inattentively allowed to pass will leave no traces behind (10, I, p. 427).

Effort and interest are here made the guides of conduct. The ball and chain logic of habit, for all its dramatic appeal, really plays only an isolated and eccentric role in James's thought.

While considering the conditions of unity in mental life, and the different meanings this conception had for James, we make note of his doubly unorthodox view of the *unconscious*. He took positions so extreme that we can scarcely find their counterpart in psychology before or since his time, and the two positions he adopted were diametrically opposed. In the *Principles* he argued against unconscious mental states, whether of the order postulated by von Hartmann, by Schopenhauer, by the British empiricists, or by the German experimentalists. Unconscious states, he claimed, are unnecessary assumptions; what they are alleged to represent are mere physiological processes, or else nothing at all (10, I, pp.

162-176). Yet in the *Varieties* he defended the hypothesis of a 'subliminal consciousness.' Below the level of self-conscious awareness he envisioned a silent but accessible region wherein the Self is extended. Our conscious egos are like tiny islets which dot a vast Pacific, each the abode of a luxuriant personal life, and each apparently isolated from its neighbors. In reality we are but the peaks of a submerged continent, and, when in rare moments we reach out under the surface, we may lay hold of non-sensory knowledge, of religious truth.

. . . there is a continuum of cosmic consciousness, against which our individuality builds but accidental fences, and into which our several minds plunge as into a mother-sea or reservoir (16, p. 204).

Whatever merits this postulate may have as an explanation of mysticism and psychic occurrences, it clearly runs counter to his own earlier denial of a non-physiological unconscious.

The man who wrote on Starbuck's questionnaire that he did not pray, because he felt foolish when he did so, and who was not in a professing sense a religious man, nevertheless argued repeatedly and extravagantly for the pragmatic legitimacy of religious faith. "Every sort of energy and endurance, of courage and capacity for handling life's evils," he insisted, "is set free in those who have religious faith. For this reason the strenuous type of character will on the battlefield of human history always outwear the easy-going type, and religion will drive irreligion to the wall" (12, p. 213). Perhaps the most important thing to be noted about James's view of religion is his rare ability to shake off the shackles of literal-mindedness with which most psychologists contemplate this area of experience. In his letters he summed it up,

. . . although all the special manifestations of religion may have been absurd (I mean its creeds and theories), yet the life of it as a whole is mankind's most important function (9, II, p. 127).

Always a bit perverse, he could not let the matter rest there. Even if religion be mankind's most important function, he advised his students,

After taking a bath in religion come out and take another bout with philosophy (20, II, p. 354).

And then, with a touch of his cosmic humor, he wrote,

Of all the vanities, when you come to look penetratingly at them, lectures on the philosophy of religion by mortal men may take the first prize (20, II, p. 355).

FREEDOM AND DETERMINISM

James's well-known recipe for getting out of bed on a cold morning is to lie long enough for the feeling of conflict to disappear, when suddenly the impulsive idea, "Hollo! I must lie here no longer" draws the laggard to his feet. Ideomotor behavior of this sort is not, in the strict sense of the word, volitional at all; but it—along with reflexes and habits—accounts for many activities that are ordinarily considered volitional. Remaining, however, is a large class of acts, true acts of will, which puzzled him deeply. To explain them he developed another of his most unorthodox hypotheses, the hypothesis of the *Fiat*. Later psychologists have not admitted the existence of a distinctive 'feeling of effort' upon which the introspective evidence for the *Fiat* hinges. It is this feeling, says James, that segregates simple ideomotor activity from true will. By denying the existence of this differential psychologists have contrived to equate will with the determining tendency or even with sub-vocal verbal conditioning. But for James,

... the whole drama of voluntary life hinges on the amount of attention, slightly more or slightly less, which rival motor ideas may receive (10, I, p. 453).

The *Fiat*, or element of consent, comes in when the neutralization of the antagonistic and inhibitory idea is required. Assuming, as the ideomotor theory does, that all representations of movement tend in some degree to evoke the actual movement, there must be times when contradictory and mutually exclusive movements are simultaneously innervated. It is under such conditions of conflict that selection, reinforcement, inhibition are achieved through an output of effort which succeeds in keeping the 'selected idea' uppermost. The power to keep the selected (usually the more repugnant) idea uppermost

is the will. When this is done, then ideomotor action takes care of the rest, the sustained idea issues automatically into action. It is, therefore, in the realm of attention that the effortful will-act takes place.

Will is related to character through the fact that what need to be controlled are the instinctive and hedonistic impulses which so frequently are anti-social. Character has to do with sustaining non-instinctive motives and with the deliberate negation of hedonism: thus character can be attained only through the exercise of will.

Now, it is only occasionally that will enters as a determinant of behavior.

Sometimes the bare idea is sufficient, but sometimes an additional conscious element, in the shape of a Fiat, mandate, or express consent, has to intervene and precede the movement (10, II, p. 522).

Nor is will needed when ordinary *interest* is a guide.

If one must have a single name for the condition upon which the impulsive and inhibitive quality of objects depends, one had better call it their *interest*. 'The interesting' is a title which covers not only the pleasant and the painful, but also the morbidly fascinating, the tediously haunting, and even the simply habitual, inasmuch as the attention usually travels on habitual lines, and what-we-attend-to and what-interests-us are synonymous terms (10, II, pp. 558f.).

In passing I remark how odd it seems that this class-concept of *interest* should have had so little influence upon subsequent systematic psychology. James offers us a simple structural unit for human motivation; but psychologists have persistently overlooked it in their search for what they consider to be 'more basic' motivational units: drives, needs, instinctual energies. And yet there is much to be said for the proposition that *interests*, developed and matured beyond the basic level of biological striving, are in fact the prime movers of human conduct.³

But we have drifted away from our discussion of the Fiat. That this conception is dualistic, mentalistic, interactionistic there can be no doubt.

³ The influence of James's concept of interest has been greater on educational practice (progressive education) and on philosophy (cf. 18) than upon psychology.

Volition is a psychic or moral fact pure and simple, and is absolutely completed when the stable state of the idea is there (10, II, p. 560).

To sum it all up in a word, the terminus of the psychological process in volition, the point to which the will is directly applied, is always an idea. . . . The only resistance which our will can possibly experience is the resistance which such an idea offers to being attended to at all (10, II, p. 567).

James admitted that there are strict limitations to the powers of the Fiat. It cannot over-ride instincts or habits that are too strong. It cannot extend itself in directions where there are no possibilities of action. No one can by mere effort of attention speak Chinese without previous training, or hold himself to work beyond the limits of his endurance. But our limits are far wider than we customarily realize (13). And our accomplishments can exceed by far our ordinary output. The great problem of the voluntarist, James clearly saw, is to discover the limits of freedom. If we are not totally free, as obviously we are not, then just how free are we?

Decisions with effort merge so gradually into those without it that it is not easy to say where the limit lies (10, II, p. 575).

James knew that he was unable to answer the question "How free are we?" But he risked a margin of true volition.

In this matter where scientific and moral postulates are at war, and where objective proof simply is not to be had, the pragmatic justification for casting one's lot with the indeterministic hypothesis is that it releases energies and avoids the tempting rationalizations in which the determinist can indulge, letting himself slip always into the channel of least resistance and regarding this slothful course as the only one possible. Provided it is not indiscriminate or extreme, a belief in freedom has—who can deny it?—benign consequences.

Perceiving the predicament that his vote for freedom creates for much that he himself had written in the *Principles* James took a singularly lame way out. He said that psychology, as a science, can safely postulate determinism even

though free-will be true. It can leave freedom in a realm before which "science simply stops."

The trouble with this solution is that psychology by not taking freedom into account, if freedom is a fact, must of necessity give a distorted view of human conduct. If the power to keep the selected idea uppermost is an authentic power, then why bury our scientific heads and refuse to face it? James seems to advocate precisely the ostrich policy for others which he himself refused to adopt. He personally was too hungry for a comprehensive view of human nature to leave out so important a capacity as the Fiat. In fact, without it, he believed that the physicalistic analogies pursued by psychologists are 'intensely reckless,' but yet he invited the recklessness of the determinists to persist.

It is safe to say that the aversion which some later psychologists have felt toward James is grounded chiefly in his own lapses from the position of strict determinism. The effect of these lapses is to weaken, in their minds, his integrity as a scientist. But do his critics themselves never lapse from strict determinism? Do they never assume in themselves or in others the possibility of 'keeping the selected idea uppermost'? Do they never in good faith praise or blame? Do they never bank on the value of marshalling or expending effort? The significant thing about James is that he wrestled openly with his contradictory hypotheses, admitted his inconsistencies in practice, and finally threw his lot with the larger and more comprehensive view.

ASSOCIATION

Next we call attention to James's predicaments in respect to the traditionally central law in psychology—the law of association. His chapter on this topic in the *Principles* is not itself unorthodox.⁴ To be sure he preferred the physiological language of *brain states* to the mentalistic language of *ideas*, but for the most part he merely summed up and rein-

⁴With the exception of his insistence upon the role of interested attention and volition in holding fast to selected elements in the course of an otherwise mechanical train of association (10, I, pp. 572, 594).

forced the dogmas of his associationistic predecessors. Even his repudiation of *ideas* was in line with the tendency of the times, and, if anything, made him appear a more thorough-going connectionist and prophet of behaviorism.

Take, for example, his treatment of association by *similarity*. The brightest minds, he contended, are known for their ability to perceive remote similarities through what he called their 'electric aptitude for analogy.' Humdrum minds associate by a more routine and predictable redintegration. But in either case the same principle of association is involved, namely that in two contexts there are aroused some partially identical elements. In simple redintegration large portions of identical nerve tracts underlie both the primary and the associated thought; whereas in association by similarity, lesser quantities of identical nerve tracts are called upon. But similarity not less than redintegration is a matter of partial identity (10, I, p. 579).

But turning back at this point to the chapter on The Stream of Thought, commonly regarded as the most characteristic Jamesian chapter, we find him denying the stability of traces which his own associationistic theory requires, and we encounter a denial of the possibility of partial identity:

It is out of the question, then, that any total brain-state should identically recur. Something like it may recur; but to suppose it to recur would be equivalent to the absurd admission that all the states that had intervened between its two appearances had been pure nonentities, and that the organ after their passage was exactly as it was before (10, I, p. 234).

If identities are never identical, how then, we must ask him, can similarity be a matter of partial identity?

In recent years it has become customary to assert that James anticipated portions of Gestalt theory, and Gestalt theory as everyone knows is anti-associationistic. His repudiation of elementarism is often cited (10, I, pp. 145-182), likewise his interest in relations and in the transitive parts of the stream of consciousness which seem to anticipate Gestalt as clearly as did the *Gestaltqualitäten* postulated by von Ehrenfels (10, I, pp. 243-248). James also may be said to

have anticipated Wertheimer's conception of insight (10, I, p. 590; II, p. 676).

Yet, in crediting him with all these anticipations of anti-associationism, we repeat that in much of his own writing James was himself an undeniable associationist. Once again the enthusiasm of the moment carried him along. Characteristically he stated the position favored in a particular context so strongly and so persuasively that both he and the reader lose sight of his previous commitments.

INDIVIDUALITY

James is most frequently classed as a functionalist, but it is important to note the context in which he submitted somewhat reluctantly to this label. Surprisingly enough he equated the *functional* with the *clinical* points of view.

We habitually hear much nowadays of the difference between structural and functional psychology. I am not sure that I understand the difference, but it probably has something to do with what I have privately been accustomed to distinguish as the analytical and the clinical points of view in psychological observation . . . the clinical conceptions, though they may be vaguer than the analytic ones, are certainly more adequate, give the concreter picture of the way the whole mind works, and are of far more urgent practical importance. So the 'physician's attitude,' the 'functional psychology' is assuredly the thing most worthy of general study today (13, pp. 1f.).

In the present day we do not think of functionalism as identical with the concrete, clinical approach to psychology. Indeed functionalism is generalized or nomothetic, whereas the clinic approach is individualized or idiographic (8, p. 1). But by whatever name we designate the intensive study of the individual, William James was its champion:

Surely the individual, the person in the singular number, is the more fundamental phenomenon, and the social institution, of whatever grade, is but secondary and ministerial (16, p. 102).

. . . in every concrete individual, there is a uniqueness that defies all formulation. We can feel the touch of it and recognize its taste, so to speak, relishing or disliking, as the case may be, but we can give no ultimate account of it, and we have in the end simply to admire the Creator (16, pp. 109f.).

He maintained in the *Principles* that he has

expressly avoided the outward appearance of doctrine and system, the definitions, classifications, subdivisions and multiplication of technical terms, because I know that these things tend to substitute an artificial schematism for the living reality with which I wished to bring my reader into direct concrete acquaintance (20, II, p. 53).

Yet for all his predilection for concrete acquaintance, for all his sparkling use of case studies, for all the brilliance of his descriptions of experience-in-the-round, seasoned with quotations from perceptive novelists, travelers, and artists, still he was both a generalizer and an abstractionist. In nearly every chapter of his writings he aimed at the discovery of universal laws of mental life uncomplicated, if possible, by the perturbations of idiosyncrasy.

One might say that for him each mental state was like a landscape, which could be appraised with the eyes of an artist and by an artist faithfully represented in all its complexity and fullness, or which could be cut with the analytical knife and reduced to the cleavages familiar to science. But it is not enough to say that James was both artist and scientist, surveying the scene now with the idiographic lens and now with the nomothetic. He did more than that. In his own unique way—and here, I believe, is where the kernel of his genius lies—he attempted to *combine* both modes of perception, a most difficult undertaking indeed. Life to him was indeed a clinic, but the cases he examined blended instantly with his theories and his laws, which in turn added the increment of scientific knowledge to the richness of immediate acquaintance. The result in his hands was a vital grasp on both the concrete and the abstract aspects of his subject. By comparison the grasp obtained by the exclusively analytical or the exclusively descriptive psychologist seems one-sided and partial.

EXPLAINING THE PARADOXES

If, in keeping with the modern passion for genetic origins, we seek to trace the background of these inconsistencies,

many possibilities lie before us. The influence of his father William repeatedly and lovingly acknowledged. Of the intellectual atmosphere the father created, Henry James, Jr., has written,

The literal played in our education as small a part as it perhaps ever played in any, and we wholesomely breathed inconsistency and ate and drank contradictions. The presence of paradox was so bright among us . . . that we fairly grew used to allow from an early time, for the so many and odd declarations we heard launched, to the extent of 'happily discounting them' (8, p. 216).

The atmosphere of brilliant paradox and lawless metaphor undoubtedly formed early habits that became second nature, intensified possibly by a modicum of father-identification.

In his late twenties, we know, James was excessively moody, and even preoccupied with thoughts of suicide. But during the darkest days he never lost for long his tenacious interest in the world around him. The end of his melancholia came with a sudden belief in the freedom of the will, gained upon reading Renouvier. We may perhaps speculate that the coexistence of depression and hope, of melancholy and the will to believe gave him a temperamental sense of the simultaneous reality of good and evil, of thesis and antithesis, of life and death. That these moody opposites impressed him we know from his remark to his father in 1873 when he was 31 years old,

Bless my soul, what a difference between me as I am now and as I was last spring at this time! Then so hypochondriacal and now with my mind so cleared up and restored to sanity. It's the difference between death and life (9, I, p. 169).

Relevant as such genetic speculations may be, they are not sufficient to explain the significance of the contradictions found in his mature thought. The fruit of his productive years is nourished by more than the husks of his past. James himself was not a geneticist, and if analyzing himself today would, I think, not encourage the backward or historical view. Let us say rather that paradox somehow fitted his mature style of work, reflecting faithfully his own mature philosophy

of life. It is, after all, the mature life-philosophy by which grown-up men and women normally live.

What I mean may be illustrated by referring to a relatively minor contradiction in his theory of emotions. On one page we read the statement,

Refuse to express a passion, and it dies. Count ten before venting your anger, and its occasion seems ridiculous (10, II, p. 463).

But three pages later,

. . . if tears or anger are simply suppressed . . . vengeful brooding may replace a burst of indignation; a dry heat may consume the frame of one who fain would weep, or he may, as Dante says, turn to stone within (10, II, p. 466).

Our first impulse is to say, "Why doesn't he make up his mind? Does refusal to express an emotion lead to its suppression with hurtful consequences, or does it not?" On second thought, we yield and say "James is right on both counts: sometimes an emotion whose expression is blocked leaves harmful tension; sometimes it doesn't, and we simply do not know the factor that differentiates the two occasions." James didn't know and we do not know. Under such circumstances is it better to present only one alternative in order to have a consistent theory of emotional inhibition, or to present both, and to appear inconsistent? In many minor instances, as the one just cited, perhaps James did not realize his own contradiction, but seeing the matter in a different light at different moments his honesty compelled him to state the facts. Honesty of report was to him a virtue far higher than consistency.

Regarding some of his major paradoxes he was fully aware. To James Ward he wrote,

Yes I *am* too unsystematic and loose! But in this case [the writing of the *Briefer Course*] I permitted myself to remain so deliberately on account of the strong aversion with which I am filled for the humbugging pretence of exactitude in the way of definition of terms and description of states that has prevailed in psychological literature.⁵

⁵ In Wundt's passion for perfect consistency he sensed a 'terrible flavor of humbug' (20, II, p. 96).

He said, in effect, consistency is a luxury we cannot yet afford. It often takes two opposed views to cut into a subject, just as a pair of scissors requires two opposed blades. Why not, then, let the science of mind be as vague, as many-sided, as contradictory as its subject? (10, I, p. 6).

Now a paradox implies that two conflicting ideas find their reconciliation in an inclusive proposition that resolves the conflict between them. When the philosopher says, "This is the best of all possible worlds, and everything in it is a necessary evil," he implies that rightly understood the apparent contradiction is resolved in a larger and self-consistent doctrine of good and evil. But in James we are not dealing with smart rhetorical paradoxes, but rather with assertions widely separated by text, each of which seems true enough in separate contexts but irreconcilable when juxtaposed. Such a situation as this would make no trouble for the true dialectician, who tells us how to gather together a thesis and an antithesis and view them both as a species of eternal truth. But James scorned dialectics, especially the fatted and verbose methodology of Hegel. He was offended by the arrogance of any forced monism, preferring by far to leave his thesis and antithesis dangling free. He would express the truth in hard words today, and tomorrow a contrasting truth in words equally hard, risking error and self-contradiction:

So far as a man stands for anything, and is productive or originaive at all, his entire vital function may be said to deal with maybes. . . . It is only by risking our persons from one hour to another than we live at all (12, p. 59).

In so far as his paradoxes can be resolved, it is in the method of pragmatism, the metaphysics of pluralism, and the epistemology of radical empiricism that we must seek the synthesis. To him the universe seemed but loosely joined, 'filled with copulas.' The word 'and' abounds, trailing along, he said, after every sentence that is spoken (14, p. 231). In such a universe we must expect mind to be many things, and truth to be many-sided. Perhaps this line of thought does not really provide a solution for all his paradoxes. Indeed,

his philosophy, we are often told, simply multiplies our difficulties, for it too is fraught with paradoxes. Yet this much seems to be true: the general design of his philosophy was the only one possible that could comprehend his paradoxical assertions in psychology, and that could express adequately his deepest conviction that the study of mind is unfinished business, and that any attempt to proceed upon narrow and exclusive assumptions is sheer arrogance.

He was definitely unwilling to buy consistency if it cost him an ounce of his own integrity. He must faithfully report his insights. If it seemed to him that men had great reserves of hidden energies, that a moral equivalent for war could be found, that mystical experiences had beneficent effects, that psychical research was a legitimate activity, he said so. And he would not refrain from saying so because such assertions would fail to square with physiological, positivistic, or behavioral premises which at moments likewise seemed valid. Objectivity and fact have their place in the scientist's view but so too have the affirmations of the believing scientist which enter into the total matrix of fact.

Reason deals with consistencies only, truth with consistencies *plus* facts; belief is itself a part of fact and a part-maker of fact, life includes all these elements and rolls reason along in its flood—enveloping it, not enveloped by it (20, II, p. 559).

Thus it is the general design of James's thought and the texture of his personality that soften and absorb his contradictions. Pluralism, tychism, radical empiricism were his own ultimate labels for his philosophical outlook. These are wholly congruent with his dominant trait of essential modesty. To his nature presumption and intellectual arrogance were totally alien. Pragmatism, the doctrine that we must appraise a theory according to its purely practical consequences, leads to the embracing of contradictory propositions whenever these in turn lead to equally beneficent results, as in a pluralistic universe they often do. Tychism, or the admission of chance, may be distasteful to the scientist, but by admitting the occurrence of chance he becomes a chastened and more open-minded observer of the world about him.

THE SIGNIFICANCE OF JAMES'S PARADOXES
FOR PSYCHOLOGY TODAY

In many respects psychologists of the present day resemble James. Like him they distrust apriorism in mental science, and are, for the most part, content to work on their many-sided subject-matter in mosaic fashion, resisting the tempting lures of unification offered by rationalism and by dialectics. Like him, they are opposed to any form of self-deception, holding aloof especially from the authoritarian superstitions of racial and class prejudice. As a group they are internationally-minded, distinctively liberal, and genuinely devoted to the interests of humanity. Furthermore, they share James's optimistic view that human nature is improvable, that wars are avoidable, and that a more inclusive democracy is possible.

Where the difference lies, I think, is in the lessened width of their horizon. As the years went by James included more and more within his conception of mental science. He wrote,

... our science is a drop, our ignorance a sea. Whatever else be certain, this at least is certain—that the world of our present natural knowledge is enveloped in a larger world of *some* sort of whose residual properties we at present can frame no positive idea (12, p. 54).

It was his passion to face up to all phenomena of mental life, and to exclude none. He made room in his psychology not only for the possible contributions of psychic research, phrenology, and mysticism, but he opened channels that would admit to the domain of psychology the "big fears, loves and indignations" of mankind and the penetrating appeal of "the higher fidelities, like justice, truth, or freedom" (12, p. 211). And he wanted psychologists to confront the fundamental moral fact that by their own theories of human nature they have the power of elevating or degrading this same human nature. Debasing assumptions debase the mind; generous assumptions exalt the mind. His own assumptions were always the most generous possible. The contrast between the expanding horizons of James and the constricting

horizons of much recent psychology has been vigorously expressed by Perry:

James's psychology was, therefore, by deliberate intent, and not by inadvertence, an omnibus psychology, in which any psychologist of today can find some of his affirmations and none of his negations. James did, it is true, seek to be in a sense 'positivistic.' But the positivism of James was almost the precise opposite of the doctrine which now passes by that name. Contemporary positivism closes all doors but one, while James's positivism opened all doors and kept them open (19, p. 79).

In the titanic world struggle now going on psychology is learning what James knew so well, the wisdom of leaving doors open. In recent months psychologists by the hundreds have left their laboratories, and shaking off the crust of custom, have entered the struggle where the "big fears, loves and indignations" of mankind are at large, where men are savage in the cause of evil or savage in the cause of good, where "the higher fidelities" have come into their own. Long ago James pointed out that a mere spectator's judgment is likely to be wrong. Discarding their habits of spectatorship psychologists are participating, and in so doing, are opening more doors of the human mind than they have ever previously taken account of. They are confronting William James face to face, for with him they are now struggling to comprehend humanity's will to believe, to marshall and release the energies of men, and to search out the moral equivalent of war. If psychologists help to make the peace they will do well to remember his words:

The course of history is nothing but the story of men's struggles from generation to generation to find the more and more inclusive order. Invent some manner of realizing your own ideals which will also satisfy the alien demands—that and that only is the path of peace (12, p. 174f.).

The message of James for psychology to-day is this: Narrow consistency can neither bring salvation to your science, nor help to mankind. Let your approaches be diverse, but let them in the aggregate do full justice to the heroic

qualities in man. If you find yourselves tangled in paradoxes, what of that? Who can say that the universe shall not contain paradoxes simply because he himself finds them unpalatable? To accommodate the whole of human experience keep layers of space and air and vision in your scientific formulations.

When his father was upon his death bed, James then in Europe wrote him a touching farewell:

All my intellectual life I derive from you; and though we have often seemed at odds in the expression thereof, I'm sure there's a harmony somewhere, and that our strivings will combine (9, I, p. 219).

Had he written a valedictory to his profession I feel sure it would have contained the selfsame words. In the pluriverse of mental science, where we stumble at thresholds, William James, the lover of humanity and of truth, would admonish us to mutual respect and a larger breadth of outlook:

I'm sure there's a harmony somewhere, and that our strivings will combine.

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THE PRINCIPLES

BY JOHN DEWEY

Of William James it can be said more truly than of any other modern writer that nothing human was foreign to him. There was nothing compartmentalized in his attitude. His range of interest was broad; it was free from the professional and technical limitations that affect most scholars. This fact emboldens me to say something about his *Principles of psychology*; for whatever be thought about its contents from the standpoint of present-day psychology, the book takes rank as a permanent classic, like Locke's *Essay* and Hume's *Treatise*. It does not lend itself to a pigeon-hole type of classification. Like them it is addressed to the general public, and every page shows the concern of its author that the public understand the bearings of the topics with which the book dealt upon everyday attitudes and affairs.

I do not mean that the book should be regarded as a philosophical treatise rather than as a psychological one. I mean that, as in the case of Locke and Hume, these conventional appellations do not signify. The primary fact is that James began as a student of medicine and physiology, and was deeply concerned to point out the bearings of new knowledge in these subjects upon understanding the make-up and workings of human nature. It is our good fortune that this preparation and mode of approach coincided with the catholic range and the freedom of James' interests, so that he brought his special training to bear upon almost every phase of human concern. Welding of scientific method with eager interest in every aspect of human nature was the result. It is this union which, in my opinion, renders James' *Principles of psychology* a classic for all time no matter what changes occur in treatment of special themes.

JAMES THE PSYCHOLOGIST—AS A PHILOSOPHER SEES HIM

BY RALPH BARTON PERRY

The to me regrettable chasm between the first and third floors of Emerson Hall, Cambridge, is symbolic of a change in the relations between philosophy and psychology which has taken place during my own professional life-time. Time was when the difference was one of emphasis, but now it is a difference of vocation, profession, problems and technique. We came to the parting of the ways when, some years ago, the philosophers were asked to sit in judgment on a series of candidates whose doctoral dissertations dealt with the a-mazed rodent. Feeling ourselves to be rank amateurs in the field, we sat in silence and accepted the expert judgment of our junior colleagues who, having been reared in a new age, were as ignorant of philosophy as were we of what is now called 'psychology.' It is the fate of philosophy to suffer from unrequited affection. It begets scientific progeny and continues to yearn for them long after they have come to regard their parentage a liability. The latest of its children to leave the home is psychology, and philosophy still keeps a light burning in the window and the door open in the vain hope that the errant one will return.

William James was at one and the same time one of the first of the scientific psychologists and one of the last of the philosophical psychologists. He wrote the *Principles* with the avowed intention of confining himself to 'facts' which were philosophically neutral. He was familiar with the physiology, biology, pathology and psychophysics of his day, approached his problems from a standpoint of naturalism, and announced his intention of avoiding metaphysics. Nevertheless the *Principles* lives today, despite the immense advance of psychology during the last sixty years, because it records the

reflections and insights of a great mind dealing with the perennial problems of philosophy.

The area once common to philosophy and psychology, and traversed by James's *Principles* despite his 'positivistic' avowals, comprises a set of problems which center in the dualism between the order of knowledge and the order of being. Mind is a part of nature, and nature is a part of mind: in some sense both of these propositions are true. Modern science assents to them both and sharpens their antithesis. For modern science has 'reduced' mind to or towards physics, at the same time that it has emphasized the constructive and 'operational' character of physics. How to reconcile these two assertions and escape their *prima facie* contradiction is a problem which modern science has light-heartedly aggravated, leaving it to be dealt with by a philosophy which it lightly esteems. This problem weighed on James's intellectual conscience. He spoke, it will be remembered, of 'the omnipresence of cognition (or reference to an object other than the mental state itself),' and said that it was 'of the mental life's essence.' His own mind was tortured by this question:

As regards the 'object' known, some call it a mere locus upon which the mind projects its own affections; some, on the contrary, say the mind is a mere locus into which the objective qualities wander and are known. Some say there is no locus of either sort, nothing but a stream, for which 'phenomena' is the neutral name, and which according to one way of viewing it may be called 'feeling,' according to another way 'objective fact.' Others again try to discriminate and call part of the stream 'feeling,' and the remainder fact.¹

These alternatives are constantly present before James throughout the *Principles*, and give to that work a homelike atmosphere where the philosopher breathes easily. Similarly, James never loses sight of man, and of the total man. While he freely resorts to every special science that will throw light on human nature, he feels a responsibility for putting Humpty Dumpty together again. The distinctively human attributes are not tucked away in a last chapter on 'Thought' or the

¹ The writer's *Thought and character of William James*, 1935, II, p. 73.

'Higher Processes' but are assumed throughout to provide the categories of psychology. He starts and remains on the level of the personal self-consciousness, and takes the facts on that level to be just as authentic as the facts on any 'lower' level.

It will be recalled that James enjoyed Ward's story (as applied to Münsterberg) of the doctor who gave his patients fits because that was the only disease he knew how to cure.² He suspected science of converting all facts into a form which satisfied the requirements of its technique. This he thought was only the latest dogmatism. He said, in effect, that if a fact or a problem does not fit a technique, so much the worse for the technique. If a problem cannot be solved by rigorous mathematical or experimental procedure, then it must be solved as well as possible. *That* problem is not solved by substituting another problem that *can* be dealt with rigorously. Indeed it is quite possible that in the theoretical, as in the practical field, the important problems are those which cannot be solved rigorously—problems such as the transcendence of the external world, the knowledge of other selves, personal identity, value and existence, the interaction of mind and body, or the relation of purpose to mechanism and of freedom to causality.

James, who said of his *Principles* that its 'strictly positivistic point of view' was the only feature of it for which he claimed originality,³ and who through his pragmatism has contributed to the method of positivism, would, if he were alive today, be in the forefront of the adversaries of positivism. The reason is very simple: He accepted any method, principle or technique for its positive fruits, but repudiated its prohibitions, negations and orthodoxies.

² *Op. cit.*, II, p. 151.

³ *Op. cit.*, II, p. 72.

A STUDENT'S IMPRESSIONS OF JAMES IN THE LATE '80's

BY EDMUND B. DELABARRE

It is hardly possible to say briefly anything newly significant about Professor James; but let me record some of the impressions he made on me while I was under his instruction, as I recall them now after the lapse of more than fifty years.

During the academic years 1888-90, I was a graduate student at Harvard, taking courses under James and Royce. According to Perry's account of his *Thought and character*, James was then in one of his periods of better health, feeling 'uncommonly hearty,' and writing of the year's work that lay before him that "I expect to enjoy it hugely." It was therefore a propitious time for study with him. He had nearly finished his *Principles*, and read many of its chapters to his class of graduate students during its sessions at his home. As young students, we were too inexperienced and had too little background to judge of his originality of thought, or of many others of his many-sided traits. But we were deeply impressed with his thorough mastery of his subject, his profound knowledge of all that had been written on all of its many phases, his judgment in arriving at such conclusions as were warranted by the evidence at hand. Yet he clearly realized that requisite evidence is rarely fully assembled and he was perfectly and admirably frank in admitting his many uncertainties and doubts. It was stimulating to realize his innate modesty and open-mindedness, and to feel that he was inciting us to think out his problems with him. We appreciated fully his remarkable genius for felicitous, clear and picturesque expression; although occasionally this led to complete misunderstanding of his meaning,—as when he said, in expounding his famous theory of emotions, that "we are sorry because we cry, afraid because we run," not the other way around. Evidently, we can be sorry without crying,

afraid without running. The illustration was striking yet unfortunate, but it does not alter the fact that *some* bodily reaction precedes and is the sensory source of the emotion that we feel, which is the essence of his well justified theory.

No one could escape feeling the deep charm of James' personality, his empathic interest in everyone about him, his constant friendliness. The times when we were invited individually to meals at his home were occasions of happy sociability and of the joyous give-and-take of congenial conversation.

During those years James conducted no formal laboratory class. He was essentially an experimentalist at heart, in the sense that he sought factual knowledge and aimed to base his beliefs upon observational experience, although in a vastly broader field than the confines of a laboratory. He had a personal disinclination for laboratory work, and was distrustful of "certain crudities of reasoning which are extremely common in men of the laboratory pure and simple." Yet he felt strongly the importance and necessity of developing psychological knowledge by experimentation of the laboratory type as well as by accurate observation of wider personal experience. These are the reasons why, some two years later, he secured the appointment of Münsterberg to a chair of experimental psychology at Harvard. In spite of all this, he did not altogether neglect laboratory procedure himself. To me, at least, he assigned several tasks of research, such as dissection of sheep's brains, some problems in vision, and a study of the effect of noise upon mental and bodily activities. At the end of my two years at Harvard, he recommended to me and some other graduate students that we go to Freiburg to continue our studies under Münsterberg, with whose published experimental investigations and announcement of a programme for further research he had been much impressed.

Of other current incidents I can mention but a few. It was at that time that Wiedersheim's denial of the inheritance of acquired characters was first announced. As I recall it, his first impression of the new view was that, if commonly accepted, it would remove certain deterrents to immoral con-

duct, as when an inebriate parent need no longer fear that he may pass on a taint to his offspring. Browning's ill-bred old-age outburst against critics of his wife led James to remark that he had utterly lost all respect for the poet that he had ever felt.

Certain criticisms of the atmosphere of Harvard were then current, and James, somewhat disturbed by them, induced me to form a committee of graduate students who had come from other colleges, to compare, by means of a questionnaire, conditions at Harvard with those at their other colleges, with the result that a pamphlet was published by the Committee, almost wholly favorable to 'The Tone and Tendencies of Harvard University.'

James' interest in psychical research was evident. The medium, Mrs. Piper, was then flourishing in Boston. I had one or two sittings with her, puzzling as to how she could possibly have been able to mention so many facts concerning my private life, but otherwise not remarkable except that she ventured some prophecies which never were fulfilled. James, I think, regarded her as honest and worthy of study, although he was never fully convinced that her performances, or those of any other person, gave complete assurance of the existence of genuinely supernormal powers.

Professor Royce, soon after James' death, classed him, together with Jonathan Edwards and Ralph Waldo Emerson, as one of the three representative American Philosophers. These three men most typically had made novel and notable contributions to general philosophy, and each had uttered "philosophical ideas characteristic of some stage and aspect of the spiritual life of his people." The extraordinary number of fields in which James made such novel and notable contributions and his enduring potent influence in all of them, surely justify such an estimate of him as a philosopher and psychologist.

A STUDENT'S IMPRESSIONS OF JAMES IN THE MIDDLE '90's

BY EDWIN D. STARBUCK

Three of the lures for my selection of Harvard University for graduate study were C. C. Everett, Dean of the Divinity School, who was lecturing on the Philosophy of Religion; William James, who wrote and lived a psychology surcharged with cultural and spiritual fineness; and Hugo Münsterberg, the highly trained experimental psychologist whom James had induced Harvard to steal from Freiburg. My work, I knew, was to be in the empirical, including the experimental, approach to the study of religion. I had collected bulletins and written letters all about the scholastic landscape to find the right place to camp for advanced study. What an array! The catalogue from P—University said, in effect, "this course is to show that the Christian Religion is and all other religions are not capable of psychological justification"!

On the occasion of the opening lecture period of the first semester, Professor James appeared, almost late, moved smoothly and unobtrusively up the middle aisle to the slightly elevated platform, placed a small bundle of books from his arm on the desk, paused, gave the class a split second of a friendly glance, lifted the index finger of his right hand above the forehead as if it were the symbol of a new idea and remarked, "Oh, excuse me, I forgot something." A minute or two following the time signal he returned, seated himself serenely at his desk and began, not lecturing to us or at us, but discussing *with* us, some of the men and movements in psychology. He showed two or three significant recent books; we should help decide if we wished to use a text and, if so, which it should be.

His 'lectures' were always vitalizing. No studied rhetoric. Always happy turns of intriguing phrases, a glow of warmth and meaning. Never a moment wasted on shop-made humor. We were always thinking *together*.

One day he ventured a diagram on the blackboard to clear up some notions we had stumbled into about relations existing between 'selfhood,' 'cognition,' 'feeling of value,' 'affectors' and 'effectors.' There were circles or lines symbolizing each of these and other states and processes. In going back over some of it he got a little ensnared in the entanglements. He backed away, cocked his head to one side and remarked, "What the deuce have we got here anyhow!" With friendly smiles and a chuckle the members of the group helped to disentangle the snarl and moved together for several strides along the psychological highway, having a good time at a bit of road building into the bargain. That sort of 'teaching' made us like the subject and love the instructor.

James' friendly informality was rooted in his inherent tactfulness. Absorbing the social formalities and conventions into a congenial mental weather, he would, for instance, make an appointment with a student for a personal conference over some 'problem' at his house at, say, eleven or five o'clock, and make that device a way of inveigling him into participating in the gracious hospitality of a perfect home. He was the consummate artist at living.

James had an uncanny way of coming to know us individually. One day before class he whispered to me the inquiry whether I would mind stopping for a minute after the recitation. After the decks were cleared, he pulled from his inner pocket a questionnaire sheet that had come into his hands, printed closely front and back, asking with much incisiveness about religious upbringing, beliefs and attitudes, how the person got that way, the lines of growth from childhood to maturity, the what and when of periodicities, if any, and other items. "This sheet," he said, "bears your signature. Did you perpetrate it?" "Guilty," I confessed. "But this is New England," he observed, "and people here will not reply to an inquisitorial document of that sort." "But they are already doing so," I replied. "How do you capture or captivate them?" he persisted. "I wheedle them; I explain that this is the beginning of a new science in the world—the psychology of religion, and we must have the *facts*. Failing in

this approach, my favorite technique, since I am a husky, is to throw the victim flat on the floor or lawn, sit on his chest and extort a solemn promise to confess everything." James graciously responded with merriment to the cheap humor and remarked that he would like, if he might keep the document, to suggest a more effective way of obtaining the desired data.

Three or four days later we were approaching on opposite sides of the wide street near Sanders Theatre. I saluted. He waved. We met exactly on the street-car lines in the middle of the street. He pulled from his pocket that self-same questionnaire, subscribed with the legend: "This study is done with the approval of C. C. Everett, Dean of the School of Religion of Harvard University, Alexander MacKenzie, Pastor of the First Congregational Church of Cambridge, Mass., and William James, Professor of Psychology, Harvard University." I braced myself and stood the shock, while hunting vainly for fitting words of appreciation. "But you mayn't do that," I protested; "this is freak stuff and you have a reputation to defend." He waved the objection aside playfully. That was a chronic attitude of James toward every student.

This attempt to unearth the raw data of the inner life caused repercussions both favorably and vexatiously at home and abroad. Professor J. Estlin Carpenter of Oxford, amongst a few others, tried to render assistance by securing confessions in England. Professor Burton of Smith College sought to collect religious life histories from his students. One of them sent the document to her father who was a member of the faculty at Yale. He wrote, "If my daughter is to be exposed to that kind of spiritual vivisection, I shall immediately take her from the College." In fighting the way through the barrage of religious transcendentalisms and negativisms, it was James' influence and continual thoughtfulness that helped most of all.

James was always more than fair-minded. A half dozen years after the inquisitorial episodes hinted above he wrote me at Stanford University, where, as a member of the faculty under the tutelage of another omnivorous mind, I was carrying on in the study of religious experiences. He had been invited

to give the Gifford Lectures at Edinburgh and was tempted to call the series, 'The Varieties of Religious Experience.' Had I any unused data from which he might draw? It was one of the most genuine pleasures of my life to be able to express to him a barrellful and two large cartons of raw data. He made use of many a skit and, contrary to specific instructions but true to his nature, he never failed to make acknowledgments.

James was faithful to significant fact in its minuteness as well as to widening Truth with its reach. He is a blind psychologist who is not something of a philosopher and a fatuous philosopher who is not infinitely circumspect about the concrete data of experience; it must never be forgotten that James set up the first psychological laboratory in America at Harvard, although in choosing between the specificities and the humanities of psychology he later abandoned it.

William James, a name of sacred memory to us all. James, humanly responsive and spiritually sensitive. The friend of perhaps every pupil who came under his tutelage. It is a sober and cherished privilege today to hold in tender recollection William James, in whose presence the haughty were reduced to simplicity, the hungry were fed, and the eager and earnest enjoyed constantly deeper integrations and more alluring vistas.

ANOTHER STUDENT'S IMPRESSIONS OF JAMES AT THE TURN OF THE CENTURY

BY ROSWELL P. ANGIER

In these personal impressions of William James, I shall confine myself to my student days at Harvard—1893 to 1897 (undergraduate) and 1900 to 1903 (graduate, in psychology). They were the most vivid and enduring impressions.

As a sophomore, philosophically *tabula rasa*, I took the eye-opening introductory course—logic by Palmer, history of modern philosophy by Santayana, and psychology by James. Compared with the others James made hard going of ordered lecturing. Certainly it could not have been said of him, as someone said of Royce, that lecturing was his natural form of breathing. "You have read today's chapter," he remarked from his favorite perch on a corner of the platform desk, holding up to the large class a copy of his *Briefer course*; "I wrote the book, and what *I* think is all there—but perhaps there is a question." In such sparrings for openings some debatable issue, perhaps self-initiated, usually bobbed up. He would then become animated and fluent, with rising assertiveness, and throw off with apparent unconcern the verbal picturesquenesses to which his writings have accustomed us. These clarifying interludes were our joy, and James' forte. Positive, even vehement in expression, he none the less impressed us as undogmatic and open-minded, as if science and philosophy were a never-ending but serious game. "The best thing I can say for it," he wrote in concluding his first exposition of his theory of the emotions, "is, that in writing it, I have almost persuaded *myself* [his italics] that it may be true."¹ We undergraduates had not read that sentence—but it would have clicked.

In the laboratory it was plain that James had neither flair nor patience for experimental work, and that he didn't care

¹ W. James, What is an emotion? *Mind*, 1884, 9, 188-205.

who knew it; he was a flat failure at pretense. One day he was energetically soaping his hands over the hopper in the cluttered laboratory room while a woman graduate student was telling him that she did not know what to do next, suggesting that she might dissect a sheep's brain. "Yes, yes," James hastily agreed, as if also washing his hands of her and her problem, "that's perhaps the best thing you *could* do." But it is a grave mistake—one long persistent—to assume that James had small use, if not actual contempt, for experiment.² After all, it was not a fortuitous circumstance that he set up perhaps the first going psychology laboratory in America, and pioneered in exploiting the findings of experimentalists (several hundred pages in the *Principles*). James' biting gibes—'brass instrument psychology' and 'the eleboration of the obvious'—were aimed at contemporary experimentalists, not at experiment. "The man who throws out most new ideas and immediately seeks to subject them to experimental control," he wrote, "is the most useful psychologist." Helmholtz was one of his idols. What he missed in his experimenting contemporaries was the ideas.

It was when fighting for fair play to human and moral values as standards of truth that James became most vehemently eloquent, and impressed most deeply his student audiences. Neither the fine-spun logic of the absolutists nor science itself could be permitted to lord it over the cogent evidence of the 'brute datum' of experience. The relational *ad infinitums* of Bradley (*Appearance and Reality*) James dubbed 'sheer intellectual perversity,' and 'Bah! what silly quibbling' he pencilled in the margin of his own copy of Royce's *The world and the individual*. In science, if the law of the conservation of energy interfered with the concept of interactionism, "what's the law of the conservation of energy among friends?"—he might have said. I particularly remember his impassioned battling, on experimental grounds, for the freedom of the will in an address on *The Dilemma of Determinism*, and another—most moving of all—on *Is Life*

² For a recent expression of this notion, see D. B. Klein, Psychology's progress and the armchair taboo, *Psychol. Rev.*, 1942, 49, 229.

Worth Living, delivered on a hot June evening in tiny, crowded Holden Chapel. As James stood there in the cramped space, close in front of his audience, reading with a sort of tumultuous rush from his nervous manuscript, perspiration streaming from his forehead, one felt almost palpably the tense absorption of the student group as he bared his own fighting faith in life's worthwhileness—closing, as his admonition to the faint-hearted, with Henry IV's greeting to the tardy Crillon, after a great victory: "Hang yourself, brave Crillon! We fought at Arques, and you were not there."

Brilliant, high-strung, dynamic, vivacious, resilient, unexpected, unconventional, picturesque—these are some of the terms that at once recur in recalling James. Among many incidents, I remember his fetching embarrassment when baffled while figuring on the blackboard; his remark in the college Yard when congratulating me on securing my Ph.D.: "*but*, you've probably read what bosh I think it all is"; the startled turning of heads toward him in crowded Sanders Theatre as he conspicuously beat the audience to its applause of General Booth at the close of a moving address on the work of the Salvation Army among the poor; his fidgeting at a department symposium in Royce's house, and his silent exit, in carpet slippers, when Münsterberg was in full teutonic swing; his entrance, with elaborate stealth, clad in brown Norfolk jacket, striped trousers, *and* silk hat, into Royce's morning metaphysics class already under way, his attentive listening to Royce on *The Absolute*—and the departure of the two from the room. We left them on the steps of Sever Hall as we slowly trailed away, still arguing, as they so often did—James animated and Royce quiet, with his whimsical, tolerant smile.

Gefühl; however, in your second letter, about your Auslassungen on the subject of Wundt, amused me by its speedy evolution into Auslassungen more animated still. I can well understand why Wundt should make his compatriots impatient. Foreigners can afford to be indifferent, for he doesn't crowd them so much. He aims at being a sort of Napoleon of the intellectual world. Unfortunately, he will never have a Waterloo, for he is a Napoleon without genius and with no central idea which, if defeated, will bring down the whole fabric in ruin. You remember what Victor Hugo says of Napoleon, in the *Misérables* — "il gênait Dieu!" Wundt only gêne his Compères,

William James in Cambridge to Carl

and whilst they make mince meat
of some one of his views by their
criticism, he is meanwhile writing
a book on an entirely different sub-
ject. But ^{him} up like a worm, and
each fragment crawls; there is no
noeud vital in his mental medulla
oblongata, so that you can't kill him
all at once. — But surely you must
admit that, since there must be pro-
fessors in the world, Wundt is the
most praiseworthy and never too
much to be respected type of the
Species. He isn't a genius, he is a
professor, — a being whose duty is to
know everything, and have his own opi-
nion about everything, connected with
his Fach. Wundt has the most hon-
digious faculty of appropriating and
pre.

experiments, and I am sure he
will find it a most inspiring
thing to work with a man in
whose hands things are as elastic
as they are in yours: If one
has not a natural taste for expe-
rimenting, the habit of it must
be formed when young, and kept
up assiduously. I am sorry to
say that I ^{have} ~~did~~ not ^{do} for Dela-
barn (or for any one) what I ought
to have done in this respect; for I
naturally hate experimental work
myself, and all my circumstances

William James in Cambridge to Hugo

Correspondence (during the ^{important} ~~critical~~ ^{years} of my life) to prevent me from getting into a routine of it, so that now it is always the duty that gets postponed. There are plenty of others to keep my time as fully employed as my working powers permit!

- I wish that you could have stayed longer in Paris; it turned out very agreeable. But I am truly rejoiced that there is some prospect of your paying us a visit here; and I hope it may be soon. I have already read your 3rd Heft with avidity. Unfortunately it reached me too late

Jubilee of the Psychological Review

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JUBILEE OF THE PSYCHOLOGICAL REVIEW

FIFTY VOLUMES OF THE PSYCHOLOGICAL REVIEW

BY HERBERT S. LANGFELD

In 1894 the PSYCHOLOGICAL REVIEW was born. Seven years earlier G. Stanley Hall had founded the *American Journal of Psychology*. William James' *Principles* appeared in 1890; also C. von Ehrenfels' *Über Gestaltqualitäten*. J. McK. Cattell and G. S. Fullerton published their monograph 'On the Perception of Small Differences' in 1892. In the same year Wundt revised his *Vorlesungen über die Menschen- und Thierseele* and the young Titchener published his first piece of research 'Zur Chronometrie des Erkennungsactes.' In 1893 Charcot died; Külpe, then 31, finished his *Grundriss der Psychologie*.

During the first year of the new journal—1894—Helmholtz and Romanes died, and M. F. Washburn became a doctor of philosophy. Stumpf went as professor of philosophy to the University of Berlin and took Schumann with him as assistant. Dewey went to Chicago. Münsterberg, who had published his *Beiträge zur experimentellen Psychologie* between 1889 and 1892, was in the middle of his three-year trial period at Harvard; and Lillian J. Martin began the work with G. E. Müller which culminated in their study 'Zur Analyse der Unterschiedsempfindlichkeit.' Hall, who was in his sixth year as president of Clark University, was considered by an enthusiastic group of young psychologists as the prime mover of the new psychology in America, while Hall himself was complaining that G. T. Ladd had already published too many books. Lloyd Morgan published his *Introduction to comparative psychology*. G. F. Stout was beginning his lectures on moral science at St. John's College, Cambridge, and William McDougall was finishing his fourth year of study at Cambridge. T. A. Ribot's *Psychologie de*

Pattention (1889) appeared in a second edition. Alfred Binet's *Psychologie des grands calculateurs et joueurs d'échecs* gave evidence of the author's budding interest in the study of intellectual capacity.

With this brief outline we have a glimpse of the psychological environment of the new journal which Cattell and J. Mark Baldwin founded. They were evidently impressed with the development of scientific psychology and wanted to see the *American Journal of Psychology* representative of the science rather than primarily the organ of Hall and Clark University. To this end they proposed to Hall that either they would buy the journal or he should continue to own it with a board of editors representing the leading universities. When Hall refused to consent to either proposal, Cattell and Baldwin started the *PSYCHOLOGICAL REVIEW*.¹

According to Baldwin the *Review*, which appeared bi-monthly, was a great success from the start. It was published by the Macmillan Company and edited on alternate years by Cattell and Baldwin, with Cattell leading off. Both names appear on the title page, the name of the acting editor for the year coming first. The distinguished list of coopera-

¹ "The *American Journal of Psychology* edited by G. Stanley Hall has always left much to be desired. Its field is very narrow and much of its work ill-done. During the past year Professors Baldwin, Cattell and Münsterberg have been negotiating with Hall to see if some arrangement might not be made for improving the *Journal*, but everything has failed; and the result is that a new journal is to be started under the title (probably) of *The Psychological Review* with Baldwin and Cattell as chief editors and all the professors of psychology in the American universities (except Jastrow and Hall) as cooperating editors. . . . I cannot but hope that the new *Review* will prove good. . . . The Editorial Committee now request you (through my hand) to permit your name to be placed on the title page as cooperating editor. Binet has already allowed his name to be so used for France. I feel quite sure that the *character* of the *Review* will be such that you need have no mistrust about your name being connected with it. On the other hand, what the editors particularly desire is that your name figuring on the title should be a guarantee to other Germans of your own confidence in the capacity of the other editors. We do not expect that you should take your *duties* very seriously, but should be exceedingly grateful for anything you may be able to send. . . . I will undertake either myself to translate or to guarantee a good translation of any manuscript, long or short, which you may send for publication. Pray think favorably of this. We all, including Münsterberg, think that there is no German psychologist whose name would so honor and adorn the new journal as yours." (James to Stumpf, *The Thoughts and Character of William James*, by R. B. Perry. Boston: Little, Brown & Co., 1935, Vol. 2, p. 186. Reprinted with permission of Little, Brown & Co. and the Atlantic Monthly Press.)

tive psychologists consisted of A. Binet, John Dewey, H. H. Donaldson, G. S. Fullerton, William James, Hugo Münsterberg, M. Allen Starr, Carl Stumpf and J. Sully.

At the same time as the Review, the *Psychological Index* was started by the editors with Howard C. Warren and Livingston Farrand as compilers. The *Index* was an adjunct of the Review. The first real offspring of the Review was the *Psychological Monographs*, which was started in 1895 with Baldwin and Cattell as editors. In 1901 Warren's name was added to the PSYCHOLOGICAL REVIEW as associate editor and business manager.

It would be hard to find two men who differed more in temperament than Cattell and Baldwin. They were alike, however, in being men of strong and decided opinions, and unfortunately they did not agree in their views on psychology. Baldwin was interested in theoretical discussion whereas Cattell wished chiefly to encourage quantitative studies. In addition there were matters of a personal nature which made for difficulties. It is not surprising, therefore, that the co-operative venture did not work out too well. That they got along at all was because, as Baldwin remarked, "each of us let the other alone during the alternate year."²

Finally in 1903, when Baldwin went to Johns Hopkins, Cattell suggested that one of them should buy the other's half interest and control the Review. A private auction was therefore arranged in Cattell's office with the two editors as the only bidders. When the sum reached \$3400, Baldwin added \$5. Cattell went to \$3500 and when Baldwin again added \$5, Cattell gave up as he had promised himself not to go higher. So the Review went to Baltimore with Baldwin, and in 1904 Warren, who had obtained a substantial interest in the publication, became co-editor. In the same year the second offspring appeared in the form of the *Psychological Bulletin*, with Warren and Baldwin as editors. In 1910 Baldwin, who had gone to Paris, decided to dispose of his share of the assets of the Psychological Review Publication Company, and Warren bought it, thus becoming the sole

² *Between two wars* (1861-1921), Boston: The Stratford Co., 1926, I, p. 65.

owner of the journals. Watson became editor of the Review, with Warren going over to the *Index*. In 1916 the *Journal of Experimental Psychology* was started, with J. B. Watson as editor. Warren went back to the Review.

In 1925 Warren offered the Psychological Review Publication Company to the American Psychological Association at the original cost price. The offer was accepted and when two-thirds of the amount had been paid, Warren cancelled the balance. Warren remained editor of the Review until his death in 1934 when Langfeld became editor.

There were 1434 articles in the first 49 volumes. This number does not include 'Discussions and Literature [reviews]' and 'Proceedings' which appeared in the Review until 1904 when they were transferred to the *Bulletin*. An important change occurred in 1916 with the appearance of the *Journal of Experimental Psychology*. From that time papers which were predominantly experimental appeared with decreasing frequency until the present policy of accepting only theoretical articles, or at least those with theory as the main theme, became firmly established.

The Review had an auspicious start, to judge from the list of distinguished contributors to the first volume. The contents are clear proof that psychology fifty years ago had already come of age. Ladd's presidential address to the American Psychological Association was the first paper published. His main thesis seems very familiar to us today. He defended psychology as a science, but believed the term should not be restricted to statistical and experimental treatment, that the science should help to improve the character of men and should contribute to their practical welfare. "Let the plain man," he wrote, "read carefully through the biggest of all these books on psychology and the astonishing thing is that so large a part of his daily experience is not simply left unexplained to his satisfaction, but is not treated at all."³

³ Cattell came the following year with his presidential address in which he defended the results of the physiological and psychological laboratories against James' statement that "curious phenomena of the dissociation of consciousness throw more light on human nature than the work of all psychophysical laboratories put together." Here we have the same controversy that has appeared in recent presidential addresses.

Francis Galton published his note 'Arithmetic by Smell' in which he described how he trained himself to do sums by means of imagined scents as symbols for the digits. John Dewey treated the Darwinian principles in relation to emotional attitude and the James-Lange theory of emotion. Josiah Royce, who in those days considered himself a student of psychology, analyzed a morbid insistent mentality in 'The Case of John Bunyan.' Hugo Münsterberg had two lengthy contributions from the Harvard Laboratory. One of them, by himself, is a minor paper related to his motor theory of attention. Another by Edgar Pierce is an account of an experiment with 'simple forms,' which has influenced aesthetic inquiry. George Stuart Fullerton made a plea for experimental psychology. He wrote, "The excellence of Professor James' book [*Principles*] . . . lies . . . in the fact that he does, in spite of himself, usually treat psychology as a natural science." Cattell, with C. S. Dolley, discussed the question, which was prominent in those days, of the possibility of measuring the velocity of the nervous impulse by means of reaction times. Their conclusion was negative but they made the insightful prophecy that "the nerve can only be measured when we are able to record its progress perhaps by electrical or chemical changes." Joseph Jastrow reported a statistical study of association of ideas in which sex differences were determined. E. W. Scripture, in a short contribution, advocated the use of the median in psychological measurement. Binet presented a number of reports from persons who had had the sudden illusion of reversed orientation. Lightner Witmer discussed the means of controlling the Hipp chronoscope, a problem which troubled psychologists for several decades. E. A. Kirkpatrick presented the results of research into the function of various forms of imagery in retention and stressed the importance of such data for education.

Some of these problems are now dead; some are still very much alive. It is of more consequence, however, that the standard of quality set by this first volume has been for the most part sustained throughout the years. Important writ-

ings of most of the outstanding American psychologists have appeared from time to time, with the prominent exceptions of Hall and Titchener (two short notes only) whose loyalty to the *American Journal of Psychology* dictated their choice of publication.

Throughout the years the Review has reflected the chief psychological interest of the time, and the articles published seem to have played a role in stimulating debate and further research, both theoretical and experimental.

Several papers of major importance appeared in the early days. John Dewey's 'The Reflex Arc Concept in Psychology' in 1896, which was vigorously attacked by Titchener in defense of structuralism, is accepted as the origin of functionalism. In his criticism of elementarism—in which, however, he was preceded by James—he helped point the way toward a Gestalt psychology. W. L. Bryan and N. Harter's two papers (1897 and 1899) on the learning of telegraphy, with their typical learning curves which are still textbook favorites, are considered a cornerstone in the experimental study of the learning process. William James' presidential address, 1895, on 'The Knowing of Things Together,' though not one of his most important papers, is significant. He here criticized the extreme associationists' view of a string of ideas whose mere contiguity is sufficient cause of their synthesis into a 'belonging together' relationship. Thorndike and Woodworth were among the early investigators of the transfer of learning. The title of their paper was 'The Influence of Improvement in One Mental Function upon the Efficiency of Other Functions.' The influence of these outstanding papers has been so great that it would be an almost impossible task to trace it through succeeding volumes.

The emotions have been one of the most popular subjects for discussion. In 1894 James, in his discussion of 'The Physical Basis of Emotion,' answered several of his critics. Of importance is the point stressed that as soon as an object has become familiar, it is the 'total situation' and not the object's 'own naked presence' from which a theory of emotion must start. We have already mentioned Dewey's 1896 study.

A. M. Feleky published her suggestive paper on the expression of emotions in 1914. In 1919 Watson outlined a treatment of the emotions. The most vigorous controversy, however, was waged around the James-Lange theory and the theories of Cannon and Bard. In 1911 J. R. Angell discussed the bearing of contemporary criticism on the James-Lange theory. In 1931 Cannon explained the advantages of his theory over the James-Lange theory. Bard gave further evidence for his and Cannon's theory in 1934. Cannon came again to the defense of his theory in 1936. In 1938 K. S. Lashley criticized the Cannon and Bard theory of the function of the thalamus in emotion.

In the same year (1913) that E. L. Thorndike made a slashing attack on the ideo-motor theory and Angell discussed 'behavior as a category of psychology,' the latter's pupil, Watson, finally persuaded by the reassuring encouragement of Warren, published his 'Psychology as the Behaviorist Sees It.' The far-reaching effect of this paper is well-known. Many papers in regard to behaviorism began to appear—some in its favor, others against it. Among the Review authors A. P. Weiss seems to have been the most strongly influenced. Beginning with his paper in 1917 on the relation of structuralism to behavioral psychology, he published a long list of articles on this subject.

Just how much Watson's behaviorism has influenced theories of learning is difficult to judge, but many papers on the subject of learning have appeared in the Review since Watson's time. E. C. Tolman could not be called a disciple of Watson, but undoubtedly a desire for objective treatment impelled him to find a place for McDougall's purpose in a scientific psychology. He became a 'purposive' behaviorist and we may follow him through the volumes of the Review from his first paper on 'Instinct and Purpose' in 1920 to his work on 'sign-Gestalt' in 1933, and the last of the schematic sow-bug papers in 1941. In close relation to Tolman's work is I. Krechevsky's 'hypothesis' concept dating from 1932. Clark Hull's theory of learning, including conditioning and goal-gradient hypothesis, may be found developed in the Review

from his paper on trial-and-error learning in 1930 to his paper on stimulus equivalents in 1939. E. R. Guthrie, somewhat critical of Tolman and with a different slant from Hull regarding the use of the mechanism of conditioning as a principle of learning, has appeared occasionally since 1930.

Raymond Dodge's series of far-reaching studies in the Review on eye-movements began in 1899. E. B. Holt's paper on eye-movement during rotation appeared in 1909. Related papers have appeared occasionally since, as for example, Walter Miles' work in 1931 on eye-movement during profound sleepiness.

The instinct controversy might be said to have begun in the Review with E. L. Thorndike's paper in 1899 on the instinct of chicks. The most provocative discussions on instincts are those of Z. Y. Kuo, which began in 1922 with an inquiry into the origin of instincts. Kuo was influenced rather by Watson than by Thorndike, but he has gone even beyond Watson in his rigid mechanistic interpretation.

Psychometrics had its beginning in the Review in 1896 with Cattell and Farrand's paper on the measurement of physical and mental traits. C. Spearman's theory of two factors appeared in 1914, although his theory of a general intelligence appeared elsewhere ten years earlier. It was followed in 1920 by G. H. Thompson's paper on 'General Vectors of Mind' in 1934. In his 'intelligence Tests of Immigrant Groups' (1930) C. C. Brigham with scientific honesty reversed his previously published view of racial differences in intelligence.

The controversy over mass vs. specific activity started in the Review in 1932 with O. C. Irwin's paper 'The Organismic Hypothesis and Differentiation of Behavior.' It was followed in the same year by a paper by W. Dennis on mass activity in the infant and by one in 1934 by K. C. Pratt on the same specific subject as that of Dennis. Operationism appeared in the Review in 1935 with Stevens' paper 'The Operational Definition of Psychological Concepts,' which was followed by Crissman's 'An Operational Definition of Concepts' in 1939, C. Bergmann and K. W. Spence's 'Operationism and Theory

in Psychology' in 1941, and E. G. Boring's "An Operational Restatement of G. E. Müller's 'Psychophysical Axioms,'" also in 1941.

G. M. Stratton's fascinating experiment on 'Vision Without Inversion of the Retinal Image' was published in 1897 and is still the basis of discussion and research. For example, in 1937 H. Ewert published 'Factors in Space Localization During Inverted Vision,' and P. T. Young's 'Reversal of Auditory Localization' which appeared in the same year evidently has Stratton's work as a background.

L. Carmichael's research 'The Development of Behavior in Vertebrates Experimentally Removed from the Influence of External Stimulation' in 1926 and his revaluation of the problem ten years later have figured prominently in discussion of the importance of environment.

Lashley's presidential address 'Basic Neural Mechanisms in Behavior' was a refutation on the basis of extensive experimentation of the reflex arc concept, and its main contentions fitted into the prevailing Gestalt theory. The outstanding Gestalt psychologists published elsewhere but frequently discussions and criticisms have appeared in the Review, as for example, R. M. Ogden's 'The Gestalt-Hypothesis' in 1928, H. Helson's 'The Fundamental Propositions of Gestalt Psychology' in 1933, and Boring's 'Psychophysiological Systems and Isomorphic Relations' in 1936. A statement similar to that on Gestalt applies to imageless thought, which is represented in the Review by Angell's 'Imageless Thought' in 1911 and R. S. Woodworth's 'A Revision of Imageless Thought' in 1915.

E. G. Wever and C. W. Bray presented their 'Present Possibilities for Auditory Theory' in 1930. The theoretical treatment based upon the findings of their well-known research on the auditory nerve impulse aroused considerable discussion and led to much further experimentation.

There are many more stimulating papers but space is limited. A selection by any one person obviously must suffer from a certain bias. It seemed of interest, therefore, to obtain

a more reliable estimate of the outstanding papers which have appeared in the Review.

From the 48 completed volumes of the Review a list of 100 titles was selected by the editor, with advice from some of his colleagues.⁴ This list was sent to 70 prominent psychologists, 35 of whom had received the Ph.D. degree before 1916 and 35 after 1924—in other words to a psychologically older group and a psychologically younger group. They were asked to check the 25 titles which they thought most important and to number the first five in order of preference. Replies were received from 52 men, 27 from the older group and 25 from the younger group. The rank order of the first ten places is shown in Table I.

TABLE I
FIRST 25 (ALL 52 MEN WHO VOTED)

Rank	Author	Article
1	J. B. Watson	Psychology as the behaviorist views it
2	W. L. Bryan and N. Harter	Studies in the physiology and psychology of the telegraphic language
3	J. Dewey	The reflex arc concept in psychology
4	E. L. Thorndike and R. S. Woodworth	The influence of improvement in one mental function upon the efficiency of other functions
5	C. Spearman	The theory of two factors
6	K. S. Lashley	Basic neural mechanisms in behavior
7	G. M. Stratton	Some preliminary experiments on vision without inversion of the retinal image
8	C. L. Hull	The goal-gradient hypothesis and maze learning
	L. Carmichael	The development of behavior in vertebrates experimentally removed from the influence of external stimulation
9	W. James	The physical basis of emotion
	E. G. Wever and C. W. Bray	Present possibilities for auditory theory
	J. McK. Cattell and L. Farrand	Physical and mental measurements of the students of Columbia University
10	J. R. Angell	The province of functional psychology

The breakdown between older and younger groups is seen in Table II. There are several noticeable differences between the two groups. The younger men reverse the ranking of Watson and Spearman; they place Spearman above

⁴ Again a certain arbitrariness appears which could not very well be avoided. One would not care to ask a large number of psychologists to go through the entire list of titles in the Review.

I am particularly indebted to Mr. A. J. Sprow for his assistance in listing, grouping, and selecting the titles.

TABLE II

TABLE I BROKEN DOWN BETWEEN OLDER AND YOUNGER GROUP OF VOTERS

Older Group		Younger Group	
Rank	Author	Rank	Author
1	Watson	1	Spearman
2	{ Dewey Bryan and Harter	2	Thorndike and Woodworth
3	{ Thorndike and Woodworth Spearman	3	{ Bryan and Harter Watson
4	{ Carmichael Lashley	4	James
5	Wever and Bray	5	{ Lashley Dewey
6	{ Cattell and Farrand Hull	6	{ Hull Stratton
7	Stratton	7	Angell
8	Angell	8	{ Thurstone ¹ Watson ²
9	Dodge ¹	9	{ Tolman ³ Wever and Bray
10	{ Washburn ² Franz ⁴	10	{ Franz Kuo ⁵
	James		Hilgard ⁶
			Carmichael

¹ Raymond Dodge, Mental work: a study in psycho dynamics.² M. F. Washburn, The function of incipient motor processes.³ S. I. Franz, Cerebral-mental relations.⁴ L. L. Thurstone, The vectors of mind.⁵ J. B. Watson, The place of kinesthetic, visceral and laryngeal organization in thinking.⁶ E. C. Tolman, Instinct and purpose.⁷ Z. Y. Kuo, How are our instincts acquired?⁸ E. R. Hilgard, The nature of the conditioned response.

Watson but they list a second title of Watson's. They place James much higher and Dewey lower than do the older men. The older men were probably influenced by the minor importance of the particular article of James, the younger by a general halo effect. As to Dewey it may be that for the younger men there was a negative halo effect from the fact that during recent years Dewey has been primarily interested in philosophy. The older men put the younger authors—Carmichael, and Wever and Bray—higher than did the younger men. The younger authors, Thurstone, Tolman, Kuo and Hilgard, appear, however, only in the list of the younger men;

and the older authors, Cattell and Farrand, Dodge, and Washburn, appear only in the list of the older men. It will be observed that the combined vote followed closely the rank order by the older men.

The preferential vote on the first five titles is seen in Table III.⁵ The combined rank order is similar to that in

TABLE III
PREFERENTIAL VOTE ON FIRST FIVE TITLES

Rank	Both Groups	Older Group	Younger Group
1	Dewey	Bryan and Harter	Dewey
2	Watson	Dewey	{ Thorndike and Woodworth
3	Thorndike and Woodworth	Watson	{ Watson
4	Bryan and Harter	Thorndike and Woodworth	James
5	James	Lashley	Lashley
6	Lashley	James	Spearman
7	Spearman	Stratton	Bryan and Harter
8	Stratton	Spearman	{ Stratton
9	Wever and Bray	Wever and Bray	{ Wever and Bray

Table I. The difference between the older and younger groups is slight; the only significant difference is that the older group put Bryan and Harter much higher than did the younger group.

It is obvious that this statistical survey has limited significance. It merely indicates what Review papers seem the most important. Many psychologists have either not published in the Review, or have not published their best papers there. There is also the question of reliability as it is very probable that different criteria were used in the choices. In spite of reservations, however, may we not call these rankings the Honor Roll of the Review in its fiftieth year?

This anniversary unfortunately comes at a time when our country is at war. It seems, therefore, a fitting conclusion to quote from an appeal to psychologists by Joseph Jastrow in the July number of the Review of 1917 on the occasion of the

⁵ This is not the usual type of preferential vote, as the men did not necessarily vote on the same five articles.

Twenty-fifth Anniversary of the American Psychological Association, as follows:

And we of today are witnessing the largest and most appalling issues of estrangement in ideals, sentiments, allegiances, that the world has faced; the psychology of war must be considered in the establishment of enduring human relations. The world is going to be wisely ruled, the endeavors of organized men more sanely directed, the errors of the past less disastrously repeated, if a body of men find participation in the direction of affairs possessed of a psychological discernment; for this insight is as indispensable to modern conditions in certain relations as is an economical, a political, or a business sense in others.

And from Gardner Murphy, who wrote in the Review in July, 1942:

. . . the bitter experience of the last few decades has shown ever more clearly that reconstruction on an economic and military basis alone is *not* practical, that a reconstruction based on a . . . deeper study of human needs, the basis of human interrelations, is the only thing that is practical at all. Psychology has its supreme opportunity to relate itself organically to the needs of the civilization for which it has arisen, and perhaps to stabilize, strengthen, humanize that civilization.

The first of these is the fact that the human race is not a single homogeneous mass, but is divided into many distinct groups, each with its own characteristics. These groups are known as races, and they are distinguished from one another by their physical and mental traits. The second fact is that these races have not remained stationary, but have changed and evolved over time. This is due to a variety of factors, including changes in environment, social conditions, and genetic inheritance. The third fact is that the human race is a product of natural selection, and that the fittest individuals are those who survive and reproduce.

The first of these groups is the Caucasian race, which is characterized by fair skin, light hair, and a high forehead. It is the most numerous of the races, and is found in Europe, Asia, and Africa.

The second group is the Mongolian race, which is characterized by dark skin, dark hair, and a flat nose. It is the second most numerous of the races, and is found in Asia and Australia. The third group is the Negroid race, which is characterized by dark skin, dark hair, and a broad nose. It is the least numerous of the races, and is found in Africa and the Americas.

The fourth group is the Australian race, which is characterized by dark skin, dark hair, and a broad nose. It is the least numerous of the races, and is found in Australia and the Americas. The fifth group is the Papuan race, which is characterized by dark skin, dark hair, and a broad nose. It is the least numerous of the races, and is found in the Pacific Islands.

The sixth group is the Melanesian race, which is characterized by dark skin, dark hair, and a broad nose. It is the least numerous of the races, and is found in the Pacific Islands. The seventh group is the Polynesian race, which is characterized by dark skin, dark hair, and a broad nose. It is the least numerous of the races, and is found in the Pacific Islands.

AMERICAN PSYCHOLOGICAL PERIODICALS

- American Journal of Psychology**—Ithaca, N. Y.; Cornell University. Subscription \$6.50. 624 pages annually. Edited by K. M. Dallenbach, Madison Bentley, and E. G. Boring. Quarterly. General and experimental psychology. Founded 1887.
- Journal of Genetic Psychology**—Provincetown, Mass.; The Journal Press. Subscription \$14.00 per annum (2 volumes). 1000 pages annually. Edited by Carl Murchison. Quarterly. Child behavior, animal behavior, and comparative psychology. Founded 1891.
- Psychological Review**—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription \$5.50. 540 pages annually. Edited by Herbert S. Langfeld. Bi-monthly. General psychology. Founded 1894.
- Psychological Monographs**—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription \$6.00 per volume. 500 pages. Edited by John F. Dashiell. Without fixed dates, each issue one or more researches. Founded 1895.
- Psychological Bulletin**—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription \$7.00. 665 pages annually. Edited by John E. Anderson. Monthly (10 numbers). Psychological literature. Founded 1904.
- Archives of Psychology**—New York, N. Y.; Columbia University. Subscription \$6.00 per volume. 500 pages. Edited by R. S. Woodworth. Without fixed dates, each number a single experimental study. Founded 1906.
- Journal of Abnormal and Social Psychology**—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription \$5.00. 560 pages annually. Edited by Gordon W. Allport. Quarterly. Founded 1906.
- Journal of Educational Psychology**—Baltimore, Md.; Warwick & York. Subscription \$6.00. 720 pages annually. Edited by J. W. Dunlap, P. M. Symonds, and H. E. Jones. Monthly except June to August. Founded 1910.
- Psychoanalytic Review**—New York, N. Y.; 64 West 56th St. Subscription \$6.00. 500 pages annually. Edited by Smith Ely Jelliffe. Quarterly. Founded 1913.
- Journal of Experimental Psychology**—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription \$14.00 per annum (2 volumes). 1040 pages annually. Edited by Samuel W. Fernberger. Monthly. Founded 1916.
- Journal of Applied Psychology**—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription \$6.00. 480 pages annually. Edited by Donald G. Paterson. Bi-monthly. Founded 1917.
- Journal of Comparative Psychology**—Baltimore, Md.; Williams & Wilkins Co. Subscription \$14.00 per annum (2 volumes). 1000 pages annually. Edited by Roy M. Dorcus, Knight Dunlap and Robert M. Yerkes. Bi-monthly. Founded 1921.
- Comparative Psychology Monographs**—Baltimore, Md.; Williams & Wilkins Co. Subscription \$6.00 per volume. 400 pages. Edited by Roy M. Dorcus. Without fixed dates, each number a single research. Founded 1922.
- Genetic Psychology Monographs**—Provincetown, Mass.; The Journal Press. Subscription \$7.00. 500 pages annually. Edited by Carl Murchison. Bi-monthly. Each number one complete research. Child behavior, animal behavior, and comparative psychology. Founded 1925.
- Psychological Abstracts**—Northwestern University, Evanston, Illinois; American Psychological Association, Inc. Subscription \$7.00. 700 pages annually. Edited by Walter S. Hunter and H. L. Ansbacher. Monthly. Abstracts of psychological literature. Founded 1927.
- Journal of General Psychology**—Provincetown, Mass.; The Journal Press. Subscription \$14.00 per annum (2 volumes). 1000 pages annually. Edited by Carl Murchison. Quarterly. Experimental, theoretical, clinical, and historical psychology. Founded 1927.
- Journal of Social Psychology**—Provincetown, Mass.; The Journal Press. Subscription \$7.00. 500 pages annually. Edited by John Dewey and Carl Murchison. Quarterly. Political, racial, and differential psychology. Founded 1929.
- Psychoanalytic Quarterly**—Albany, N. Y.; 372-374 Broadway. Subscription \$6.00. 540 pages annually. Edited by Bertram D. Lewin and others. Quarterly. Founded 1932.
- Character and Personality**—Durham, N. C.; Duke University Press. Subscription \$2.00. 360 pages annually. Edited by Karl Zener. Quarterly. Founded 1932.
- Journal of Psychology**—Provincetown, Mass.; The Journal Press. Subscription \$14.00 per annum (2 volumes). 800-1200 pages annually. Edited by Carl Murchison. Quarterly. Founded 1936.
- Psychometrika**—University of Chicago, Chicago, Ill.; Psychometric Society. Subscription \$10.00. 320 pages annually. Edited by L. L. Thurstone and others. Quarterly. Quantitative methods in psychology. Founded 1936.
- Psychological Record**—Bloomington, Ind.; Principia Press. Subscription \$4.00. 500 pages annually. Edited by J. R. Kantor and C. M. Louttit. Without fixed dates, each number a single research. General psychology. Founded 1937.
- Journal of Consulting Psychology**—Lancaster, Penn.; Science Printing Co. Subscription \$3.00. 240 pages annually. Edited by J. F. Symonds. Bi-monthly. Founded 1937.

